



Mental health in the construction sector: preventing and managing psychosocial risks in the workplace

Report

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List of Abbreviations

UK	United Kingdom
SE	Sweden
SSRN	Social Science Research Network
SERV	Social and Economic Council of Flanders
SME	Small and Medium-sized Enterprise
PTSD	Post-Traumatic Stress Disorder
PPE	Personal Protective Equipment
OSH	Occupational Safety and Health
NWCS	Netherlands Working Conditions Survey
MSD	Musculoskeletal Disorder
LGBTQ+	Lesbian, Gay, Bisexual, Trans, Queer and Others
LV	Latvia
IT	Italy
IE	Ireland
ILO	International Labour Organisation
ICT	Information and Communications Technology
GDP	Gross Domestic Product
DE	Germany
FLC	Fundación Laboral de la Construcción (Spanish Labour Foundation for Construction)
FRA	European Union Agency for Fundamental Rights
EU	European Union
EFBWW	European Federation of Building and Woodworkers
EEC	European Economic Community
EESC	European Economic and Social Committee
ECOSO	European Construction Sector Observatory

Executive Summary

In 2023, the European Commission's Communication on a comprehensive approach to mental health called for an EU-wide Healthy Workplaces flagship initiative on psychosocial risks and mental health at work, with a specific focus on new and overlooked occupational sectors, including agriculture and construction. In response to this call, this report examines the evidence on work-related psychosocial risk factors in the construction sector, their impact on mental health outcomes, and the positive impact organisations can have on the prevention of workplace psychosocial risks to improve workers' mental wellbeing.

Psychosocial risks are influenced by working conditions and 'macho' male cultures

Psychosocial workplace risks include specific interactions and events that emerge from cases of poor working conditions relative to work design, organisation or management and to the social context in the workplace (Cox & Griffiths, 1995). Over 50% of European workers believe that stress is common in their workplace and that the impact of work-related mental health disorders on people, organisations and economies is increasing (EU-OSHA, 2013).

The construction sector employs around 18 million people in the EU, and jobs are physically and mentally demanding regardless of skill level. In fact, 46% of the EU's construction workers are exposed to severe time pressures and work overload (EU-OSHA, 2022b). Additionally, the representation of SMEs in the sector is high, with 95% of companies employing fewer than 20 workers (EESC, 2022). Thus, organisational constraints can inhibit efforts to manage psychosocial occupational safety and health (OSH) risks and protect workers' mental wellbeing.

Frequent exposure to dirt, dust, noise or vibration is a workplace norm in construction work, and the risk of non-fatal workplace accidents is high. Construction tasks involve a multifaceted set of demands, including perceptual, psychomotor, social and cognitive requirements. These demands require workers' full attention and can, in some cases, act as additional stressors. The high-risk nature of construction work significantly impacts workers' mental health, although this is perceived by sector representatives to be minimised by the construction workforce. The downplaying of the inherent risks in construction work might be connected to a workforce that is over 90% male and characterised as having a traditionally macho culture (Eurostat, 2022). This culture can pose health hazards due to stigmatised attitudes towards mental health issues and help-seeking behaviours, expectations about physical and psychological endurance, and acceptance of detrimental behavioural coping mechanisms such as substance misuse behaviours. Overall, the construction sector shows lower sensitivity to mental health issues compared to other economic sectors, with 71% of construction companies reluctant to openly discuss psychosocial issues (EU-OSHA, 2022c). This evidence suggests that mental health is taboo in the sector and highlights the embedded issues that need to be addressed to create psychologically safe working conditions for construction workers.

Other unique features and psychosocial risks that define the sector are the commonplace use of subcontracting practices, the prevalence of temporary workplaces, exposure to adverse weather conditions often in the outdoors, travel challenges and the project-based nature of construction activities. Additionally, the use of manual-skilled labour is high in this sector. Such work is associated with monotonous movements and tasks and cognitive demands due to physical strain.

Other psychosocial risks prevalent in the sector include high physical and psychological demands; workload and time pressures; role conflict; lack of job autonomy and control; lack of supervision, support and recognition; lack of participatory decision-making; and workplace bullying. Additionally, long working hours, unpredictable shift changes, high work pace and work intensity, and little job autonomy, control and task diversity are significant issues that impact job satisfaction and adversely affect construction workers' mental health. The risk of suffering mental health problems is amplified when workers are required to manage multiple operations with unrealistic targets. All these factors are significant context-derived stressors common in construction activities that can cause workers to experience feelings of anger and irritation and lead to fatigue, burnout, stress and depression.

Temporary work sites, management and organisational practices impact workplace dynamics and feelings of isolation

The absence of a fixed workplace can lead to feelings of rootlessness, isolation and loneliness, and lower perception of workplace support. Social isolation is a primary mental health stressor in the sector (CIOB, 2020). Furthermore, changing work locations influence travel times, which impacts workers' resting and leisure time and their overall work–life balance. Within the workplace, relationships and stress levels are affected by staff changes, the presence of temporary workers and turnover rates. These issues can foster conflict and role ambiguity within teams and negatively influence workers' morale, collaboration, teamwork, and perceptions of collegial and supervisory support. Additionally, communication problems, particularly those associated with language barriers, are significant stressors impacting interpersonal interactions, feelings of security and organisational OSH practices. Indeed, poor communication and cooperation in construction companies is one of the top three psychosocial risk factors for the European construction workforce (EU-OSHA, 2022b).

The accessibility of coordinators and leaders, operational and management changes, supply chain disruptions, work pipeline uncertainties, and low instrumental and emotional support are other sources of mental distress that contribute to conflict levels, workload and work pace pressures, and feelings of low job autonomy and control. Health risks associated with all these factors are heightened by poor management and organisational resources and a lack of consideration of workers' recovery needs. Moreover, exposure to psychosocial risks inversely increases according to company size; workers in smaller companies are more susceptible to suffering stressors. The ability and capacity of SMEs to ensure psychosocial safety may be compromised by resource constraints (e.g. time, financial and human resources). An additional concern is the lack of appropriate and specific OSH provisions regarding reduction of psychosocial risks and protection of mental health in tendering criteria for procurements in construction, and little adherence to and enforcement of OSH practices during project delivery.

Job and financial insecurity are critical psychosocial risk factors

The sector is particularly vulnerable to economic downturns, geopolitical changes and macroeconomic conditions. Thus, feelings of insecurity and uncertainty are intertwined with wider market, political and socioeconomic factors. Additionally, precarious working arrangements and subcontracting practices (common in the sector), undeclared work, low pay and late payments cause feelings of job and financial insecurity to arise. Low-skilled, lower-socioeconomic-status workers and migrants are at higher risk of exposure to these stressors. Business-to-business payments and cost pressures (e.g. materials) can be stressors for business owners, as delayed payments and inflation impact business development and viability, as well as salary payments. All these factors induce occupational stress and contribute to anxiety, financial stress, instability, uncertainty and, in some instances, burnout.

Climate change, technological innovation and the green transition create new demands for workers

The growing uptake of new digital technologies, which is connected to work efficiencies and the green transition, requires workers with advanced and specialist skills. While a multitude of benefits are associated with these technologies, stressors emerge in the arenas of continuous professional development, workplace surveillance, general health and safety skills for new tools and machines, work–life balance, job autonomy and cognitive overload. Instances exist where digitalisation induced classical stress responses, musculoskeletal diseases, digital fatigue, burnout and 'technostress' (EU-OSHA, 2021). Concerns about alienation and isolation and insufficient management and leadership skills to support the digital transformation are other psychosocial stressors relevant for the construction sector.

Construction workers are often working outdoors and hence they are exposed and vulnerable to the worst effects of climate change, largely associated with prolonged exposure to heatwaves and other weather extremes. Research on the connection between climate change and construction workers' mental health is scarce but gradually increasing. What is known is that working in extreme heat conditions increases the incidence of heat stroke and fatalities among construction workers and contributes to anxiety and depression, physical fatigue, psychological stress, hallucinations, impaired judgement and a lack of mental coordination (Xiang et al., 2014; Karthick et al., 2023). Furthermore,

climate change and weather conditions lead to work disruptions and delays, compounding workload and work pace pressures, affecting adherence to OSH standards.

Gender, age, nationality, work experience and professional status linked to higher risk exposure

Education and experience level, relationships or family, and carer status are common social factors increasing exposure to psychosocial risks in the construction sector. Vulnerable worker groups in the sector include migrants, LGBTQ+ individuals, low-skilled and young workers, women and the self-employed. Gender-based harassment, ageism, racism and discrimination typify the experiences of migrant workers, women and LGBTQ+ individuals in the sector. The employment of women and LGBTQ+ people is low, while migrant workers are, in contrast, overrepresented in the sector (European Commission [EC], 2022).

Specific risks for migrant workers include language barriers (both written and verbal), pre-existing mental health conditions (e.g. post-traumatic stress disorder (PTSD)), the allocation of unpleasant work tasks, family separation, and the limited availability of accessible OSH training and information. Posted workers, a subgroup of migrants, experience similar risks, with prolonged long-distance work and compliance with the Posted Workers Directive highlighted as additional stressors for this subgroup of migrant workers.

Women make up only 10% of the construction workforce (Eurostat, 2022) and specific risks to women in construction are associated with personal protective equipment designed to male anthropometric standards, accessibility to hygiene facilities, and gender-based discrimination and harassment. Consequently, women in construction have a higher risk of experiencing mental distress, anxiety, guilt, marginalisation and exclusion. The visibility of members of the LGBTQ+ community is equally low and may be associated with the prevalent macho culture in the sector. Research demonstrates that in reaction to bullying, discrimination and harassment, LGBTQ+ individuals embody masculine traits as a defence mechanism (Wright, 2013). The impact of such adaptation strategies on the mental health of this group requires further research and investigation.

The vulnerability of younger workers in construction is associated with a lack of work experience, which is correlated with confidence levels and better coping mechanisms towards organisational stressors such as bullying. The risk of younger workers experiencing a workplace accident and other hazards can also be linked to a lack of self-esteem to challenge poor OSH working practices. Older age is generally a protective factor against psychosocial stress. However, physiological changes from ageing can increase the risk of work-related injuries, while skill discretion and perceptions of job monotony may increase with age and experience and are considered as significant stressors for older workers.

Finally, professional status is also associated with unique risks. For example, self-employed construction workers are more exposed to job and economic insecurity, long hours and high workloads. Low-skilled workers, in comparison, are more prone to suffering psychological violence from employers and thus have increased anxiety about workplace conflict (Kozlova & Lakisa, 2016). The mental health of managers and other higher-skilled workers, compared to their lower-skilled colleagues, is impacted by project tendering, subcontracting practices and the structural fragmentation of the sector. Meanwhile, risks associated with SME ownership include feelings of responsibility for their workers, late payments and cost pressures impacting business viability.

Workers' mental health and organisational wellbeing largely depend on psychosocially safe working conditions

When exposed to multiple psychosocial risks, workers are prone to experience stress, anxiety, and physical and mental fatigue. Concentration, distraction and risk-taking behaviours are induced by psychosocial risk factors influencing most emotional and cognitive mental health symptoms. Feeling overwhelmed, unconfident, lonely and pressurised leads to thoughts of self-harm, sleep disturbances, feelings of anger and irritability. These emotional responses are associated with workload pressures, work pace, job control, emotional demands and workplace support. Moreover, high time pressure and exposure to workplace violence and harassment are markedly linked to the occurrence of occupational accidents.

Depression and burnout are among the most prevalent adverse mental health outcomes and are associated with low job control and security, little or no management support, and role conflict. Office-based construction workers and higher-skilled site-based professionals are more likely to experience depression and burnout than on-site workers (Tijani et al., 2020b). An interesting finding emerged in that remote working appears to protect against burnout, which is higher among office workers than remote workers. PTSD is also more prevalent in the construction sector compared to other sectors of activity (Chan et al., 2020; London et al., 2022). Worryingly, this outcome may be hidden in high-risk construction environments where OSH fails to adequately address hazardous work conditions, including the presence of psychosocial risk factors. Substance misuse and abuse are behavioural outcomes associated with poor task design, working conditions, organisational cultural norms and inadequate social support.

Overall EU figures on suicide are unavailable, but studies from Anglo-Saxon countries suggest that men working in construction are three times more likely to die by suicide than the national male average (ONS, 2019). Studies from Australia also show that suicide rates are higher among male construction workers than the general population (Maheen et al., 2022). Suicide, suicidal thoughts and suicidal ideation are mostly associated with the exposure to suicidal behaviours of colleagues and peers, as well as with job insecurity, prolonged periods of financial struggle and transitional unemployment (Ross et al., 2022; Chan et al., 2020). Sector-specific suicide prevention initiatives, such as Australia's Mates in Construction programme, have demonstrated a positive impact on suicide rates, and implementing similar initiatives is strongly encouraged (Maheen et al., 2022).

Poor mental health outcomes have a significant impact on business productivity with higher worker turnover and workplace burnout. Absenteeism and presenteeism are long-recognised negative outcomes for organisations linked to toxic cultures, low organisational trust, job autonomy and adverse ergonomic conditions. These factors contribute to workers' productivity and wellbeing and impact job engagement and satisfaction levels. Likewise, worker absentee and turnover rates and workplace satisfaction affect organisations' productivity levels, revenue and profit margins (CIF Ireland, 2020). Moreover, work-related psychosocial stressors and their mental health consequences, including suicide, impact the sector's attractiveness, a critical issue for a sector facing workforce shortages and challenges in attracting and retaining workers amid an ongoing demographic decline.

Tackling the organisational determinants to protect workers' mental health

The best practices preventing poor mental health outcomes in the sector are those that incorporate holistic interventions combining individual and organisational-focused elements. These interventions increase mental health awareness in organisations, which simultaneously decreases mental health-related stigma. They can provide individuals with tools to assess workplace psychosocial risks and protect their and their colleagues' wellbeing. Such initiatives include mental health and intervention training (e.g. Constructiv), the availability of mental health first aiders in companies (e.g. The Lighthouse Construction Charity, MENTUPP), and toolkits supporting workers to identify and address workplace psychosocial risks (e.g. Fundación Laboral de la Construcción; Prevent).

Holistic efforts also entail work tackling the organisational determinants of mental health (e.g. workload, time pressures, interpersonal communication), which the literature and sector stakeholders strongly recommend.

Initiatives targeting the organisational determinants of mental health include the elimination of precarious working conditions and the introduction of protected working conditions and flexible working arrangements (e.g. Malareförbundet, PORR, EFBWW). Emergency financial support programmes (e.g. PORR) and workplaces and countries that provide inclusive working environments (e.g. Malareförbundet, CTSP, Women in Construction) are powerful collective initiatives mitigating the impact of psychosocial risks on workers' wellbeing. Furthermore, implementing guidance produced by EU sectoral social partners to assess, manage and reduce organisational psychosocial risks in construction will send a powerful message to workers that companies consider their mental wellbeing as important as their physical wellbeing.

Workplace interventions need to go beyond the individual. Research shows that organisational approaches have a positive impact on health-promoting behaviours and working environments (Grill

et al., 2017). Contractual conditions, job autonomy and control, regular workload reviews, management styles and diverse approaches to task execution can counteract psychosocial organisational risks. Meanwhile, efforts to enhance job security by offering career development opportunities, improving salaries and enhancing professional status will increase job engagement and satisfaction and thus increase productivity levels.

Further research and guidance

Based upon the study's overall findings, a series of lessons learned for researchers, organisations and policymakers emerged in this study. These include:

- Diversifying research methods and closing research gaps, particularly those related to LGBTQ+, women, digitalisation, climate change and suicide.
- Implementing mixed, participatory, approaches (individual and organisational) targeting the organisational determinants of mental health. Approaches should target organisational change, commit to assessing and addressing psychosocial risks on par with physical health hazards, and promote positive mental health in the workplace.
- Specific workplace mental health interventions facilitating intervention and treatment services that ensure confidentiality, regular workload reviews and the provision of flexible working arrangements. Providing return-to-work services, critical for recovery after an episode of mental ill health is also suggested.
- Embedding OSH provisions, including those related to psychosocial risks and mental health, in tendering criteria and supply chain practices, assisting construction businesses with limited resources to tackle mental health, and ensuring labour inspectorate staff are sufficiently trained and qualified to ensure national OSH implementation.
- Ensuring that collective sectoral agreements adopt a health-in-all-policies perspective, including mental health and considering the interplay of physical conditions and psychosocial risks. This perspective should become the norm in discussion forums, social dialogues, and in policymaking and legislative initiatives to improve mental wellbeing in the sector. Including the needs of women and minority groups in these discussions is highly necessary.
- Assist construction companies with more limited resources and the self-employed to tackle psychosocial risks and safeguard mental health.
- Support and promote community mental health resources to improve accessibility to specialist services.
- Encourage cooperation between national OSH institutions across the EU to provide tailored guidance for the variety of professions and workers in the construction sector.

1 Introduction

1.1 Background

Following renewed calls for the prioritisation of mental health, the European Commission published a Communication on a comprehensive approach to mental health that claimed a need for more initiatives on psychosocial risks at work (European Commission [EC], 2021; EC, 2023). One of the flagship initiatives within this communication includes an EU-wide European Agency for Safety and Health at Work (EU-OSHA) Healthy Workplaces Campaign on psychosocial risks and mental health at work focusing specifically on both new and overlooked occupational sectors, including agriculture and construction.

Psychosocial hazards, according to Cox and Griffiths (1995), are defined as ‘those aspects of work design and the organisation and management of work, and their social and environmental context, which may have the potential to cause psychological or physical harm’. Additionally, the ILO (n.d.) defines psychosocial risks as ‘anything in the design or management of work that increases the risk of work-related stress’. Common psychosocial risks include job content and design, workload and work pace, job control, environment and equipment, organisational roles, home–work interface, organisational culture, interpersonal workplace relationships and career development (ILO, n.d.). Furthermore, psychosocial risk exposure can overlap with the impact of poor physical and environmental working conditions, including ergonomic-related risks (e.g. Arjona-Fuentes et al., 2019). Thus, psychosocial risk factors include specific interactions and events that emerge from cases of poor working conditions relative to either work design, organisation and management, and/or to the social context at the workplace (Cox & Griffiths, 1995; ILO, n.d.; EU-OSHA, 2000).

Over 50% of European workers think that stress is common in their workplace (EU-OSHA, 2013) and up to 45% of workers report facing workplace risk factors that adversely affect their mental health (EU-OSHA, n.d.). Meanwhile, growing research evidence indicates an association between psychosocial risk exposure and adverse mental health outcomes (e.g. Aronsson et al., 2017; Harvey et al., 2017; Van der Molen et al., 2020; Niedhammer et al., 2021). These outcomes include, among others, stress,¹ depression, anxiety, burnout and sleep disturbances.

This report, focusing on the construction sector, examines exposure to psychosocial risks and their complex interplay with various adverse outcomes, particularly mental health, but also physical, behavioural and organisational effects. It explores psychosocial risk factors and their mental health implications to provide a holistic perspective on their impact on the construction sector’s workforce.

Additionally, the report presents practical examples of good practices/workplace interventions from different countries and contexts to prevent and manage psychosocial risks and mental health outcomes in the sector and offers insights for future research and policy.

1.2 Methodology

A scoping literature review of scientific publications was conducted, complemented by desk research of grey literature and semi-structured interviews with selected stakeholders in the sector.

The process for the scoping literature review involved the selection of keywords used in three literature-specific databases (i.e. PubMed, Scopus and Google Scholar). The keywords were introduced following flexible combinations in the search engines. The grey literature searches involved a comprehensive web search across various platforms (e.g. Google, Elsevier, ResearchGate, SSRN) to locate relevant documents. Additionally, snowballing (a method wherein initial literature is used to identify subsequent studies) and exploration of websites from relevant networks and organisations were included in the literature overview.

Relevant publications identified from both searches were introduced into an Excel dataset for in-depth screening, full text review and selection for inclusion in this report.

¹ See: <https://osha.europa.eu/en/themes/psychosocial-risks-and-stress>

Further, relevant stakeholders to contact for interviews were identified, including public organisations, industry representatives, social partners, networks and organisations related to the construction sector. Interviews were considered for both EU and national-level actors. All interviews were audio recorded, conducted in English and transcribed ad verbatim. The research team developed a questionnaire (see Annex 1) to guide the semi-structured interviews, and to ensure that essential topics were covered consistently. Interview results were analysed by using a mixed approach of constant comparison analysis and thematic analysis. In this way, the interviews were contrasted and compared to one another and analysed in view of the findings from the published literature.

For the selection of good practices included in this report, first-level identification criteria focused on initiatives that addressed prevention, rehabilitation or mental health promotion. The good practices prioritised were those at organisational level and initiated by employers. Second-level criteria included information availability, a specific focus on the sector, an emphasis on wellbeing and mental health promotion, and evidence of the effectiveness of the initiatives.

Both scientific and grey literature and multiple expert views were considered in elaborating the recommendations contained in the final section of the report.

1.3 Understanding the European construction sector

Construction, or the building sector, encompasses the development of buildings (residential and non-residential), civil engineering projects (roads, railways, bridges, tunnels, utilities and water projects), and other specialised activities (demolition, renovation, maintenance and decoration) (NACE, 2010).

Construction is one of the largest industrial sectors, both at the EU level and globally. Recent EU data suggest that the sector comprehensively provides circa 18 million jobs and contributes to about 9% of the EU's gross domestic product (GDP) (EC, 2022). In Germany alone, the construction sector's contribution to the GDP increased from €26 billion in 1991 to almost €44 billion in 2018 (Rodriguez et al., 2020). Notably, the sector is primarily composed of SMEs, with 95% of companies employing fewer than 20 workers (European Federation of Building and Woodworkers (EFBWW) & European Construction Industry Federation (FIEC), 2019a; EESC, 2022).

Table 1: Drivers impacting psychosocial risks and mental health in the construction sector

Drivers	
High incidence of accidents	Highest incidence of non-fatal accidents in the EU impacting mental health.
OSH compliance challenges	Challenges meeting safety requirements affecting workers' wellbeing.
Psychosocial stress and work–life balance issues	Work-related stress and work–life balance issues affecting mental health.
Demands of the working environment	Physical and psychological demands can lead to stress and other associated health consequences.
Limited OSH measures and risk management	Organisational focus on physical more than psychosocial hazards.
Structural vulnerability to economic fluctuations	Economic fluctuations are a common cause of stress (job insecurity, income fluctuations).
Technological and skill mismatch challenges	Changes linked to technological advancements and sustainable practices creating skill mismatches.
Demographic trends	Ageing, gender disparity, presence of migrant workers and overall declining workforce.

Source: Author's elaboration

In addition to being one of Europe's largest sectors in terms of employment and productivity, construction is also one of the most professionally demanding economic sectors (EU-OSHA, 2014). The working environment involves the use of heavy machinery, working at heights, exposure to harmful substances, and potential exposure to physical risks like vibration or noise (European Construction Sector Observatory [ESCO], 2020). Indeed, recent data from Eurostat show that in 2021, the highest incidence of non-fatal accidents at work in the EU was observed in construction, with 3,152 such accidents per 100,000 persons employed (Eurostat, 2024).

Additionally, recent EU-level survey data revealed that three-quarters of construction companies in 12 EU countries faced challenges in adhering to mandatory occupational safety and health (OSH) requirements (ESCO, 2020). An estimated 40% of workers did not work safely, highlighting a need for a circa 60% increase in OSH-related training for these companies. The sector's greatest need is therefore to implement a more comprehensive 'culture of prevention', including awareness-raising and preventive measures in pre-construction plans (ESCO, 2020). While ministries of labour or labour inspectorates may be responsible for OSH at the national level, these data seem to indicate that further harmonisation of EU-level OSH practices and standards in the construction sector could still be beneficial for all Member States. This would be particularly relevant considering shared challenges (e.g. implementation of OSH in smaller companies, as discussed below) and the expanding practice of posting workers for construction activities across EU countries.

Work in the construction sector is not only physically but additionally psychologically demanding, increasing the risk of long-term health issues (ESCO, 2020). Evidence from Austria supports this claim as data from the 'Working Climate Index' survey (2023) showed that construction workers felt more stressed than workers in other sectors in relation to risk of accident and injury, workload and time pressure. Additionally, the *Social and Economic Council of Flanders* (SERV) in Belgium carried out a dedicated study between 2016 and 2017, highlighting that 33% of workers in the sector experienced work-related stress and that 17.8% had work–life balance problems. Heavy workloads, demanding physical burdens and emotionally demanding work were reported as the most serious risks for the

profession (see also Serv.be, 2016). The *Spanish Labour Foundation for Construction* (Fundación Laboral de la Construcción [FLC]) developed a questionnaire with 760 responses from construction workers in a variety of companies at national level, coupled with a series of focus groups and interviews. They found that 21% of the workers reported varying degrees of exposure to work-related psychosocial risks (11% moderate, 6% high, 5% very high). Lack of participation in decision-making and lack of job supervision were the most relevant psychosocial hazards, followed by high workload and role conflict (FLC, 2016). Another survey conducted in the United Kingdom (UK) in 2019 reported that 97% of construction workers had felt stressed at least once in the previous year (CIOB, 2020). Notwithstanding, the construction industry had the fourth-lowest number of sick days due to mental illness across all Austrian national industries (see also Austrian Working Climate Index, 2023).

The Third European Survey of Enterprises on New and Emerging Risks (ESENER) indicated that companies in the EU construction sector face additional challenges in dealing with psychosocial risks (EU-OSHA, 2022c). Speculation on the reasons for this includes companies' primary focus on immediate physical risks and the high number of SMEs in the sector with limited resources for local risk management (EFBWW & FIEC, 2019). For example, in terms of aspects routinely evaluated in workplace risk assessment, only 66% of construction companies in the ESENER study dealt with organisational aspects such as the arrangement of work schedules, and only 57% tackled supervisor–relationships. The percentage of establishments is much higher when looking at other OSH measures in place in the sector such as the supervision of machine safety (93%) or exposure to noise, vibration and temperature stress (83%). In addition, only 34% of construction companies reported the use of surveys to identify work-related stress, compared to the average of 44% across all sectors (EU-OSHA, 2022c).

To understand the range of psychosocial hazards affecting workers in the construction sector, it is likewise important to explore the sector's dynamics and specific trends that influence its work environment. Nearly 95% of construction, architecture and civil engineering firms in Europe are SMEs (EESC, 2022; EC, 2022), encompassing various market segments such as architecture and design, equipment and material manufacture, transportation, and energy and waste management. These findings are confirmed by the European Builders Confederation (EBC) who highlight that SME's account for 88% of total employment and add 80% of the total value added of the construction sector while micro-enterprises (employing fewer than 10 persons) making up 94% of sector (EBC, n.d.). The prevalence of a significant number of SMEs is intrinsically linked to the high number of intermediaries working on construction sites, providing a wide variety of specialised services simultaneously (ILO, 2015). Therefore, the complex organisation of work, involving multiple stakeholders, is a key aspect of the sector. For instance, even highly professional large companies often hire engineering or design services to complement construction services (ILO, 2021). The labour force is frequently supplied by external labour agents and building materials (as well as plant equipment) are often purchased or rented from other smaller companies. Consequently, the project-based nature of construction work and the common use of subcontracting, usually from a larger company to SMEs, all create challenging working conditions stimulated by continuous bidding processes for adjudicating contracts and tight deadlines. Adding to this, the externalisation of labour force supply encourages the offering of temporary and precarious contractual conditions to workers (London et al., 2022).

The construction sector demonstrates considerable structural vulnerability to financial crises. Any slowdown in economic activities, whether in terms of significant public infrastructure projects or private investments, often leads to decreased profits for companies and reduced income for workers (EU-OSHA, 2013). Conversely, in a phase of economic recovery, the revitalisation of the sector often results in sudden increases in contracts and new cumulative workloads for all professional categories involved in building activities, including managers, supervisors and other on-site workers.

Furthermore, the sector experiences pressure to enhance efficiency and productivity, including from the EU level given ambitions to comply with the large-scale digital and green transitions through the Next Generation EU investment plan in the post-pandemic period (EC, 2019). This includes incorporating technologies such as mobile information and communication technologies (mobile-ICT), AI systems, big data, and advanced automation and sensorisation (e.g. building information modelling, robotics). A further consequence of these transitions may be a mismatch of skills in the sector's workforce considering the new technological and sustainable scenario (ESCO, 2020; CEDEFOP, 2023b).

Other obstacles for the sector are related to demographic trends in the EU. Both the declining totals of workers and the ageing rate of the active workforce in construction have been increasing over recent decades. Data insights are provided from both Eurostat (*European Labour Force Survey*) and the European Centre for the Development of Vocational Training (CEDEFOP, 2023b). Around 7.6 million people were directly employed as construction workers in 2022 (around 4% of total EU employment). Construction workers are relatively older compared with the average across all occupations. In 2021, 32% of construction workers were aged 50 to 64 years, compared with 28% across all occupations. The share of employed workers in construction fell by 800,000 during the COVID-19 pandemic, but quickly recovered in spring 2021. While employment levels are predicated to remain stable for the next decade, the sector is plagued with staff shortages due to the unattractiveness of the section and people exiting indefinitely (CEDEFOP, 2023a; EURES, 2024). Another consistent observation in the sector is the low presence of women. In 2021, just 2% of on-site construction workers were women (CEDEFOP 2023a,). Even when looking at an expanded definition of the sector (e.g. civil engineering, architecture, trades and services) and comparing the gender distribution across the total rank of jobs in all occupations in the EU, construction remains in the last position employing 10% of total females in the third quarter of 2021 (Eurostat, 2022). The presence of migrant workers is high in the sector. Several features of the professions in the sector may explain migrants' high presence in the sector. Examples include the low entry skills for some jobs, the relative ease of accessing manual work, the lower language barriers faced by workers (e.g. lack of customer interaction as compared to the service sector), and an apparent willingness to accept lower wages. In 2022, the EC estimated that non-EU citizens were overrepresented in employment rates (understood as the appointment of new jobs) of construction occupations, specifically for building and related trades work. Non-EU citizens' rates stood at 6.1%, compared to 3.7% for EU citizens (EC, 2024). Migrant workers may face additional barriers (e.g. not speaking the language of the country where they work) to understand and comply with OSH requirements, a challenge of the construction sector mentioned above.

2 Psychosocial risks and mental health in construction

2.1 Previous overviews

The construction industry presents a landscape of potential work-related psychosocial risks that can significantly impact the mental health of its workforce. All roles in construction, irrespective of skill level, involve substantial physical and mental demands owing to the dynamic nature of the sector and the intense workload. Commonly recognised work-related psychosocial risk factors are frequent in construction, but others are unique to or particularly intensified in construction activities (Table 2).

Table 2: Psychosocial risk factors in construction

Main risk factors	Specific risks to construction
Physical and ergonomic demands	Manual-skilled positions: cognitive demands from physical strain.
Work-life-family balance	Organisational justice issues within construction companies, e.g. employee–employer relations.
Job and financial insecurity	Cultural factors: toxic masculinity and mental health stigma.
Stressful work environment	Project-based nature of construction activities.
Lack of social support and decision-making involvement	Extended exposure to adverse weather and travelling challenges (e.g. commute distance/times).
Psychological strain (high workload, time pressure)	Unhealthy working conditions (dirty, noisy, dusty environments).
Contemporary issues: COVID-19, digitalisation and environmental sustainability	Transient work sites, which are frequently outdoors.

Source: Author's elaboration

Previous comprehensive reviews on the primary stressors impacting construction workers and their mental health have been published (EU-OSHA, 2013, 2014; CIF Ireland, 2020; CIOB, 2020). The physical and mentally demanding nature of the sector is attributed to the substantial workload involved in providing construction services. Manual building work imposes significant ergonomic demands in the execution of productive activities. Furthermore, professionals across various categories in the sector may, in certain cases, find themselves working longer hours than a standard 40-hour contract, operating under intense time and productivity pressures.

In manual-skilled positions, the combination of high physical strain and ergonomic demands (often constrained by low job autonomy and skill discretion) can entail elevated cognitive demands. This is particularly evident when individuals must perform various types of tasks simultaneously or engage in consultations with other team members or subcontractors on the same working site. Exposure to suboptimal working conditions, such as dirty, dusty and noisy environments, as well as extreme weather conditions, can become, under certain circumstances, another source of mental distress. Additionally, the temporary nature of construction sites, influencing the possibility of frequent commuting or travelling, can add another challenge to the mental wellbeing of certain workers in the sector.

Social risk factors may be frequent for building workers. The high level of involvement in construction processes can, at times, lead to challenges in balancing employment with family life and leisure activities. Moreover, issues related to organisational justice could manifest in worker relations within construction companies. Therefore, a lack of social support (e.g. employer-to-employee, among employees), limited participation and involvement in decision-making, inadequate training and a poor

organisational structure could also turn into significant stressors for workers. Cultural factors ingrained in the sector, such as toxic masculinity (potentially stimulating bullying or harassment behaviours), the stigmatisation of mental health or episodes of stoicism, may play a role in the development of adverse mental health outcomes.

Psychosocial risks associated with job and financial insecurity are markedly present in the construction sector, especially concerning contractual conditions with fixed-term or project-based contracts, lower salaries for low-skilled positions and fears of overall financial insecurity. Some risk factors impacting mental health are linked to the project-based and tendering nature of construction activities, which fosters a busy professional environment with the management and delivery of contracts. The structural vulnerability of the sector to economic cycles and crises further aggravates these challenges.

Additionally, a series of contemporary issues capable of disrupting or altering construction activities can contribute to the development of new stressors. These can be unforeseen circumstances, such as the COVID-19 health crisis, or long-term evolving trends, like the required use of advanced mechanisation and digitalisation technologies, or challenges resulting from exposure to adverse weather conditions due to climate change. Specific work-related risk factors may be present based on professional status (e.g. construction professionals in office jobs versus low-skilled manual workers) or belonging to a more vulnerable worker group (e.g. additional risks for women or migrants).



The literature from the EU and the UK provides support for the growing concerns regarding mental health issues and psychosocial hazards among European construction workers. The Netherlands has significantly contributed to the research on psychosocial risk exposure and its impact on mental health and organisational outcomes in the sector. A study by Boschman et al. (2013) compared a large sample of 1,500 workers, including manual construction workers (bricklayers) and supervisors. The findings revealed differences in psychosocial risk exposure and mental health outcomes between the two roles. Both groups demonstrated a high need for recovery after work, with supervisors reporting a greater need (25% compared to 14% for bricklayers). Reported symptoms showed varying prevalence rates in both groups, including mental distress (5% and 7%, respectively), depression (18% and 20%), and post-traumatic stress disorder (PTSD) (11% and 7%). Statistical significance was found within the depression and distress scores. Differences in outcomes appear to be linked to a lack of support from the supervisors' direct managers.

Alavinia et al. (2009) conducted a study involving 5,867 construction workers, highlighting the multifactorial nature of sickness absence. Their findings underscored the significance of individual, lifestyle and work-related factors as predictors of absenteeism. Heavy physical demands, monotonous movements and lack of job control were identified as key work-related risk factors for psychosocial exposure, while healthy lifestyle behaviours and individual resilience were recognised as protective factors against occupational physical and mental demands.

Van der Klauw et al. (2016) assessed the incidence of mental diseases resulting from occupational accidents and the correlation between psychosocial factors at work and the occurrence of occupational injuries. Their comparative study between the Dutch construction sector and the health and welfare sector revealed that, while occupational accidents in the construction industry more often led to physical

than psychological harm, a poor psychosocial environment was associated with occupational accidents in both sectors. In the construction industry specifically, high time pressure and exposure to workplace violence and harassment were markedly linked to the occurrence of occupational accidents. Maintaining job satisfaction and retaining the older workforce pose significant challenges in the construction sector.

Hoonakker and van Duivenbooden (2010) conducted a comprehensive national-level survey involving approximately 35,000 workers interviewed annually. Their findings revealed that older workers displayed greater resilience towards physically demanding work and high psychosocial workloads, although they reported increasing complaints related to awkward movements and the development of musculoskeletal disorders (MSDs). Interestingly, the survey indicated that older workers in construction overall experienced a reduced risk of injury compared to their younger counterparts. Oude Hengel et al. (2012) utilised data from the Netherlands Working Conditions Survey (NWCS) involving 5,610 workers to analyse psychosocial risk exposure and its association with both the willingness and 'ability' to work, particularly in relation to early retirement. Their overall findings suggested that within the challenging psychosocial work environment, older workers still had the ability but were less willing to continue working in the construction profession until the age of 65, showing a higher tendency to opt for early retirement.

Survey findings from both Ireland and the UK reveal concerning insights. A study by the Chartered Institute of Building (CIOB, 2020) included a sample of 2,081 workers across Ireland, the UK and other countries. Prior to the COVID-19 pandemic, the survey reported alarming figures: 87% of the employees experienced anxiety, 70% faced depression, 97% dealt with stress, 96% felt fatigue, 95% struggled with poor concentration, 91% felt overwhelmed, 86% experienced a lack of self-confidence and 26% even reported suicidal thoughts.

In Denmark and Sweden, studies have investigated the relationship between MSDs and occupational stress, shedding light on the intricate interplay between these factors. Jensen and Kofoed (2002) conducted research involving 102 floor-layer tradesmen in Denmark, exploring the association between psychological work strain, stress and musculoskeletal complaints. They identified a connection between high physical and psychological work strain (evaluated through time pressure and work intensity) and inadequate workplace communication and project management, leading to both occupational stress and the development of MSDs in the knees and lower back. Ajslev et al. (2017) focused on a sample of 481 construction workers in Denmark, involving various tradesmen such as carpenters, scaffolders, bricklayers and concrete workers. They highlighted key psychosocial risk factors in their study, including the lack of job autonomy and control, insufficient support from management, a dearth of colleagues' support (especially in avoiding physical strain), and a macho culture tolerating excessive physical strain, time pressure and long working hours. These risks demonstrated a direct correlation with both physical and mental fatigue, as well as the development of back pain. Another study comparing both Denmark and Sweden conducted a questionnaire analysis on 811 construction workers and their companies, specifically addressing determinants of job satisfaction (Grill et al., 2017). The research revealed that transformational, active transactional, rule-oriented and participative leadership from companies predicted better OSH outcomes. The influence of leadership behaviours on safety outcomes was similar in both countries. However, rule-oriented and participative leadership were more prevalent in the Swedish construction sector, potentially contributing to the higher reported occupational accident rates in Denmark.

Perez-Alonso et al. (2021) conducted an assessment in Spain to evaluate psychosocial risk exposure rates among a small sample of specialised greenhouse construction workers (n = 62). The study identified several significant risks in this category, including high job demands, mobbing, work conflict, lack of recognition, lack of job autonomy, emotional conflict and lack of job control. While the research did not specifically inquire about mental health outcomes, the results indicated a high risk of exposure in 2.9% of the workers, with an estimated medium-to-high risk for 45.1% of the participants. In another study in Spain by Navarro-Abal et al. (2018), researchers explored determinants of work engagement in 302 individuals employed by Andalusian construction companies. The findings revealed that work experience in the sector was associated with increased overall job satisfaction. Workers above 55 years of age reported higher satisfaction with their work compared to those between 36 and 45 years old. Additionally, individuals with two to five years of experience exhibited higher levels of overall satisfaction, contrasting with workers with experience ranging from six months to two years. Dissatisfaction was more

pronounced among workers without a contract and interns. The study additionally found a positive correlation between job satisfaction and positive health perception, while indicating a negative correlation between job satisfaction and perceived bodily pain or poor health.

Urnikytė and Kaminskas (2010) conducted an in-depth study with a small sample of 57 construction workers in Lithuania. Their observations indicated that factors such as a lack of participation in decision-making (organisational involvement), a lack of work task variety, and high physical and psychological demands (e.g. body strain, time and productivity pressure) are associated with increased occupational stress. Additionally, young workers displayed symptoms of irritability. In terms of determinants, the study found that marital status was a predictor of exposure to job and financial insecurity. The most vulnerable category identified was young married males without higher education.

Rodríguez et al. (2020) explored the consequences of high job demands on the mental health of SME construction workers in Germany. Their study, involving a small sample of 65 workers, considered exposure to both physical and multilevel intellectual demands (perceptual, psychomotor, social and cognitive) required by employees in their roles. The results indicated that around one-quarter of the workers experienced symptoms resembling burnout, and approximately one-third experienced symptoms of depression. The researchers argued that the multi-component strain resulting from both types of job demands (physical and cognitive) can lead to negative mental health outcomes.

Sommovigo et al. (2021) conducted a study focusing on 96 tunnel construction workers in Italy. They found evidence of a moderate presence of psychosocial malaise among these specialised construction workers, which was understood as a combination of fatigue, stress and mental complaints. This malaise was primarily associated with factors such as workload, work pace (including intensity and pressure), lack of job control, high emotional demands, and a lack of job support from both employers and colleagues. Although not included in the study questionnaire, the authors suggested that exposure to specific adverse micro-climatic conditions in tunnel building sites (e.g. high humidity, lack of fresh air and visibility, heat stress) and low job control due to machine operating times (e.g. drilling operations) may contribute to adverse mental health outcomes for these workers.

As the evidence presented so far shows, many of the existing studies are based on relatively small sample sizes and are conducted in diverse settings and countries, necessitating the validation of key findings through larger, more comprehensive analyses. Meanwhile, previous attempts have been made to systematically categorise and classify both psychosocial risks and affected workers' groups in construction. For instance, the systematic literature review by Tijani et al. (2021a) identified up to 49 psychosocial stressors present in the construction work environment, with the most frequent risk factors in the literature being work overload, poor working environment, home–work conflict, role ambiguity and poor workplace relationships (employer/employee and among employees). In terms of classification, the EU-OSHA Wiki page brings risk factors together under five different categories, covering job characteristics (i.e. work environment, work quantity), role in the organisation (i.e. role description, responsibility), social aspects (i.e. social support), job prospects (i.e. career development, salary), and organisational factors (i.e. management, procedures, culture) (EU-OSHA, 2013). Fagbenro et al. (2023) employed a simplified system, including three broad families: industry-related structural factors, management/organisational risks, and personal life–work risks. Li et al. (2022) provided a more elaborate classification of psychosocial risks divided across motivational risks (i.e. nature of job task and work management), relational risks (social relations in the workplace), working environment risks (i.e. relationship between job task and working conditions), personal attributes (e.g. low socioeconomic status, own health), and social cognitive risks (e.g. lack of family support). Importantly, they also distinguished vulnerable groups, including female, younger, older and migrant workers.

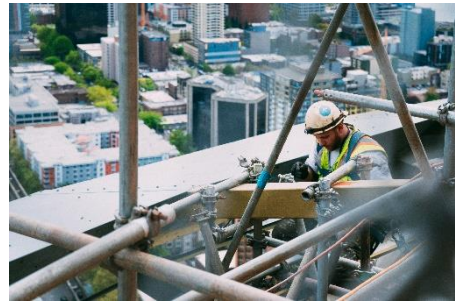
Building upon these initial reviews, the rest of this chapter describes the evidence on psychosocial risks and their potential mental health consequences using an enhanced classification model based on the work by Harvey et al. (2017). The model recognises up to three categories of risk factors (i.e. construction working conditions; social, organisational and cultural relations; and job and financial insecurity). In addition, this report aims to incorporate updated knowledge on the subject considering structural factors (e.g. project-based nature of construction, structural dependency in the economy), the presence of drivers amplifying or stimulating the emergence of new stressors (i.e. digitalisation, health

crises, climate change), and the different risks found in specific professions or workers' groups in the sector.

An important research limitation highlighted by this overview is that most studies on mental health and psychosocial conditions are based on cross-sectional study designs (one-time surveys with no follow-up of workers), which have a limited ability to establish causal associations (Thelin & Donham, 2016). Longitudinal studies, based on proposing the same questions to the same study participants at different periods in time, are still sparse in the literature dedicated to this topic (EU-OSHA, 2023b). Nwaogu et al. (2020) conducted a mapping review of scientific evidence in the mental health field within the construction industry, looking at the geographical distribution of studies. Their findings indicated a strong and consolidated research focus in Australia, followed by other Anglo-Saxon countries such as Canada and the United States. In Europe, aside from a more pronounced emphasis in the UK, most studies were found in the Netherlands. This research essentially supports these findings. Despite some of the available data coming from smaller studies with context-specific focuses, the results point out research gaps across EU countries regarding psychosocial risks and mental health in the construction sector.

2.2 Tasks, working conditions and MSDs

Three main determinants of psychosocial risks in the sector were identified in the published literature: those related to specific task design and management in construction work, context-derived working conditions and MSDs.



Task design and work management practices

Construction work is physically and mentally demanding. Both the tasks performed and the environmental conditions of the work may play roles as psychosocial stressors. In terms of task design, a widely acknowledged risk factor is associated with long working hours, at times required for the completion of building tasks beyond regular shift times (Bevan et al., 2022; CITB, 2021; CIF Ireland, 2020; CIOB, 2020; Chan et al., 2020; London et al., 2022; Fagbenro et al., 2023; Powell et al., 2018; Lingard & Turner, 2023; Hulls et al., 2022). In some extreme cases, these can even exceed 60 hours per week (Chan et al., 2020). The job's rhythm may be marked by intensive shift work, including nights, weekends and holidays (EU-OSHA, 2014; Flannery et al., 2019; Fagbenro et al., 2023), also described as 'total worker availability' (Powell et al., 2018).

These risks are closely linked to two other risk possibilities in construction work — namely, the constant pressure of time and productivity, often referred to as work pace (EU-OSHA, 2013, 2014; Bevan et al., 2022; CIF Ireland, 2020; CIOB, 2020; Fagbenro et al., 2023; Urnikytė & Kaminskas, 2010), and the frequent experience of work overload (EU-OSHA, 2014; CITB, 2021; CIF Ireland, 2020; CIOB, 2020; Chan et al., 2020; Li et al., 2022; Fagbenro et al., 2023; Sun, 2023). These factors highlight the possibility of the high work intensity faced by construction workers, who can, at times, be tasked with managing multiple construction operations within short timeframes, leading to unrealistic work targets. In fact, an average of 46% of the EU's construction workers are exposed to severe time pressures and work overload (EU-OSHA, 2022b).

The nature of tasks can similarly be considered a potential stressor, as construction activities (e.g. bricklaying, excavating, scaffolding and tunnelling) are often associated with a lack of variety in task execution and how to perform them (low skills discretion) (EU-OSHA, 2013, 2014; Anwer et al., 2021; Urnikytė & Kaminskas, 2010). Additionally, these tasks can involve low autonomy and a lack of job control (EU-OSHA, 2014; Fagbenro et al., 2023; Alavinia et al., 2009; Sun, 2023), defined by the strict adherence to team supervisor authority and the absence of freedom in approaching tasks.

Context-derived working conditions

Construction sites could present poor working conditions (in terms of comfort or hygiene) and entail hazardous environments, acting as significant context-derived stressors for mental health (EU-OSHA, 2013; CIF Ireland, 2020; CIOB, 2020; Flannery et al., 2019; Fagbenro et al., 2023). Poor environments are characterised by the presence of dirt, dust and noise or by lacking basic amenities like proper catering and toilet facilities, offering little privacy in open-field settings (CIOB, 2020). Moreover,

construction projects frequently unfold in open or semi-open spaces, exposing on-site workers to natural weather events and seasonal cycles (EU-OSHA, 2014; CIOB, 2020; Li et al., 2022). Extreme weather conditions, such as high or low temperatures, lighting and rain, could pose additional stressors for workers' mental health.

Lastly, the nature of construction work may involve frequent displacement, a need to commute and sometimes long-distance travel to various work locations (CITB, 2021; CIF Ireland, 2020; CIOB, 2020; Flannery et al., 2019; Hulls et al., 2022; Franklin et al., 2022). In some cases, workers may even spend multiple days away from home. Given the decentralised nature of construction projects, workers often find themselves moving between different sites. Work–family balance or other circumstances may become stressful due to constant physical workplace changes that potentially increase the distance between work and home locations.

Interplay between MSDs and psychosocial risks

The OSH literature dedicated to psychosocial factors in the construction sector has investigated the physical and mental effects of high levels of physical workload on construction workers. A dual relationship has been observed between excessive physical and ergonomic demands, contributing to the onset of MSDs and the mental strain that both precedes and follows the occurrence of these physical disorders (EU-OSHA, 2014; Anwer et al., 2021; Li et al., 2022; Fagbenro et al., 2023; Urnikyté & Kaminskas, 2010; Rodriguez et al., 2020; Jensen & Kofoed, 2002).



MSDs resulting from the physical strain associated with manually demanding jobs encompass a range of inflammatory and degenerative diseases of the musculoskeletal system affecting various body areas, such as the wrist, elbow, shoulders, neck and spine. Traditional physical causes of MSDs include the execution of repetitive manual tasks, lifting and carrying heavy loads, exposure to full-body vibrations, maintaining improper posture, engaging in strong and sudden movements, experiencing direct mechanical pressure on body tissues, and exposure to unfavourable outdoor conditions (e.g. low temperature) (EU-OSHA, 2019).

The intricate connection between exposure to psychosocial risk factors and the manifestation of MSDs is rooted in the concept of stress development. It has been proposed that since one symptom of stress is the development of physical tension in the body, it can render the worker more susceptible to the physical causes of MSDs described earlier. Recent evidence underscores the influence of the psychosocial environment on the development of stress and the subsequent emergence of MSDs in manual workers. Factors such as long working hours (and the corresponding inability to recover), working at high speed under pressure, engaging in repetitive or monotonous activities, and intensive shift work emerge as predominant contributors to task-related stress (Anwer et al., 2021; Jensen & Kofoed, 2002). Conversely, the development of MSDs may not only result from adverse work conditions but can also serve as a pathway to further mental health issues. Research has utilised concepts like physical pain or the diagnosis of MSDs to gauge and illustrate their contribution to the emergence of negative mental health outcomes. This process creates a downward spiral where stress induces MSDs, and the resulting discomfort adds to the accumulation of stress, subsequently impacting the worker's mental wellbeing.

The landscape of construction stressors identified extends beyond the realm of physical effort alone. Recent research, such as the work by Rodriguez et al. (2020), sheds light on the substantial psychological demands that all workers in the sector may incur. Whether it is construction professionals in office roles or on-site manual workers, the tasks present in construction work can lead to a multifaceted set of demands. These include perceptual, psychomotor, social and cognitive requirements that demand the full attention of workers and can, in some cases, act as additional stressors.

2.3 Social, organisational and cultural relations

Work-related psychosocial risks in the construction sector may also encompass social, organisational and cultural aspects.

Balance between work and private life

Recent studies have shed light on the fact that family concerns could act as a significant stressor for construction workers, contributing to stress and anxiety (Bevan et al., 2022). Long working hours and extended shifts could result in construction workers being absent from family responsibilities, which can, in some cases, result in strained relationships, inadequate time for family care and limited leisure time. Gender analyses within the male-dominated construction sector indicate a need for a cultural shift to address stereotypes and improve conditions related to atypical schedules, work–family balance and parenting rights. Workforce shortages and low retention of female workers underscore potential challenges that need attention (Le François & Trottier, 2022; CIF Ireland, 2020).



Factors such as physical strain and lengthy commutes may result in minimal downtime for workers, diminishing their ability to disconnect from work. It can, under certain circumstances, lead to a limited work–life balance. Another stressor associated with the nature of the work is social isolation (Bowers et al., 2018), causing a sense of exclusion from social contacts. This aspect is identified by some literature as a primary mental health stressor in the construction industry (Gómez-Salgado et al., 2023; Fagbenro et al., 2023).

A survey of over 2,000 construction professionals in the UK conducted in 2019 revealed that more than 80% of manual workers found it stressful to work in isolation, often away from their family and friends for weeks at a time (CIOB, 2020).

Organisational determinants

High turnover rates and the presence of mixed teams, consisting of individuals hired on fixed-term contracts or through temporary agencies, can sometimes foster conflicts and role ambiguity in companies. These factors hold the potential to adversely affect workers' morale and could be detrimental to their mental health (EU-OSHA, 2013, 2014). The transient nature of the construction sector, marked by frequent project changes, either concurrently on the same site or by moving staff between different sites, may contribute to these challenges (CIF Ireland, 2020). Moreover, in cases of frequent management and procedural changes, supply chain disruptions or an absence of adequate feedback at work (Li et al., 2022), there can be uncertainties about work pipelines (CIOB, 2020) and overall poor role clarity. These can also be recognised as a source of mental distress (Sun et al., 2022).

Furthermore, short-term contracts and volatile teams could restrict the opportunity to foster team spirit. The literature highlighted that the absence of a cohesive social environment at work can result in low levels of perceived co-worker social support (Dale et al., 2021). Similarly, insufficient or no supervisory support (EU-OSHA, 2013, 2014) can be damaging for the worker. Potentially, it could range from the absence of instrumental support in providing guidance on task management to a lack of compassion, emotional support and empathy. Support deficiencies, whether from colleagues, business partners or managers, are likely to contribute to a work environment characterised by heightened interpersonal conflict situations (Sun, 2023).

Insufficient organisational support or the inability to discuss events in the workplace and participate in decision-making may combine with sudden and unexpected changes in project decisions inherent to the nature of the work (Chan et al., 2020). Together, these factors could contribute to heightening workers' feelings of insecurity and a lack of protective and participatory mechanisms. For example, when reviewing professional sectors where workers had a role in the design and set-up of measures to address psychosocial risks, construction companies were among the ones with the lowest participatory scores (from 55% to 49% of total companies surveyed in the sector) (EU-OSHA, 2022c). Indeed, poor

communication and cooperation in construction companies is one of the top three psychosocial risk factors for the European construction workforce (EU-OSHA, 2022b).

Insufficient information and consultation on work issues (Urnikytė & Kaminskas, 2010), including limited involvement in occupational health and safety decision-making (EU-OSHA, 2013), could lead to increased stress by diminishing feelings of autonomy. In contrast, a study involving construction companies from Denmark and Sweden indicated that participative leadership, even in establishing and enforcing safety rules, acts as a catalyst for health-promoting behaviours and better working environments (Grill et al., 2017), underscoring the need for coordinated actions and investments in this direction (CITB, 2021). Poor organisational safety-specific leadership is recognised as a relevant yet under-analysed risk factor (Li et al., 2022). Overall, the construction sector exhibits a less developed organisational OSH culture and lower sensitivity to mental health issues compared to other economic sectors.

Possible deficiencies in hierarchical organisation, standardised work procedures and division of department functions in the construction sector (Flannery et al., 2019) could impact communication mechanisms, at both the management and staff level (CIF Ireland, 2020). This can affect clear communication when changing work instructions or making new decisions (Fagbenro et al., 2023), with workers (particularly migrant workers) facing language barriers at times (Ahmed et al., 2022). Additionally, it could hamper communication among the various parties involved in the building phases (Jensen & Kofoed, 2002). Within this context, one study likewise reported shortcomings in work grievance systems (CIF Ireland, 2020).

Cultural norms and values

A set of psychosocial hazards in the sector directly correlates with cultural norms. The prevalent 'macho' culture, which tends to permeate workers' values, can, at times, create an environment where traits of toxic masculinity are common (Flannery et al., 2019). This can sometimes lead to widespread unspoken norms at work (i.e. long hours, total availability, presenteeism, a constant need to prove one's worth and a culture of force) (Powell, 2018). According to a framework review of the literature on masculinity in the sector, construction workers' perceptions could be rooted in a distorted concept of stoicism, whereby individuals are expected to be manly, endure physical and psychological challenges, avoid complaining and refrain from showing signs of weakness (Ross et al., 2022).

Connected to this, literature sources consider the consequent shame for mental health (Kotera et al., 2019) and the reluctance to seek help and discuss mental troubles as two of the most relevant risk factors endangering construction workers' wellbeing. According to results from the ESENER study (EU-OSHA, 2022c), 'reluctance to talk openly about these [psychosocial] issues' is one of the most frequently reported obstacles in all 19 professional sectors under examination. This was true for 71% of the construction companies interviewed. The underlying main cause of such reluctance is considered to be mental health stigma, at times associated with psychological distress and impaired sleep. Mental health stigmatisation can be a powerful deterrent for seeking and valuing support, in addition to being linked with lower self-esteem, a predictive factor for depressive symptoms (Eyllon et al., 2020).

Mechanisms of male bonding and camaraderie could contribute to decreasing social awkwardness and promoting a sense of mutual tolerance and understanding towards negative coping strategies and risky health behaviours such as alcohol and substance abuse (Flannery et al., 2019; Eyllon et al., 2020; Chapman et al., 2020). Further consequences of conservative cultural norms and values can sometimes lead to bullying and mobbing behaviours (CIF Ireland, 2020; CIOB, 2020) and other forms of harassment and discrimination (Li et al., 2022).

2.4 Job and financial insecurity

Job precarity and insecurity have a significant impact on the lives of construction workers. These stressors are sometimes driven by structural elements such as the prevalence of fixed-term or project-based contracts or the absence of a fixed workplace setting (EU-OSHA, 2013; CITB, 2021; CIOB, 2020; Sun et al., 2022; Flannery et al., 2019; Fagbenro et al., 2023; Sun, 2023). All these elements may contribute to shaping workers' perceptions of uncertainty about job continuity and future income. Moreover, the lack of a fixed work location could lead to a sense of rootlessness and instability among

workers. Uncertainty about the future of employment can contribute to work-related stress and anxiety. Late or delayed payments from companies to workers along the entire supply chain (CIOB, 2020) further exacerbate these challenges. When companies face late payments from clients or struggle to pay subcontractors promptly, it can result in workers not receiving their wages on time. This financial instability can disrupt personal lives and create a broader sense of financial uncertainty and lack of control.

Low pay is a significant concern for psychosocial wellbeing (Flannery et al., 2019), leading to financial stress and a reduced quality of life. This is particularly pronounced for low-skilled workers, although variations exist across EU Member States. Financial insecurity extends beyond contractual matters, seeping into other aspects of life (Bevan et al., 2022; CIF Ireland, 2020; Fagbenro et al., 2023; Duckworth et al., 2024; Urnikytė & Kaminskas, 2010). For example, family responsibilities, including the need to provide for spouses and children, amplify feelings of concern. These financial worries can potentially spill over and affect mental health and overall wellbeing. Many construction workers, particularly in the low-skilled category, have concerns about accumulating personal debt (Bevan et al., 2022). These fears are closely tied to job insecurity, as any income disruptions make it difficult to meet financial obligations, adding another potential stress dimension for construction workers. In addition to these financial worries, concerns about periods of unemployment when transitioning between contracts under precarious conditions play a crucial role (EU-OSHA, 2013) in amplifying workers' job-related stress. These phases of temporary unemployment could lead to financial strain, anxiety and a sense of instability. Lastly, the fear of voicing financial concerns at the workplace (Eyllon et al., 2020) is present among workers. Expressing vulnerability or dissatisfaction could potentially be perceived as a sign of weakness, making workers feel more vulnerable to losing their job. Inability to voice concerns could amplify workers' psychological burden, as they may feel further isolated and unsupported.

Workers with low socioeconomic status (more common among the low-skilled and the self-employed) may suffer from greater exposure to psychosocial stressors and associated negative mental health outcomes, for example, via increased feelings of job insecurity or low job autonomy (Chan et al., 2020; CIF Ireland, 2020; EU-OSHA, 2023b). However, research in construction is careful to consider 'individual' factors such as concern about personal health or lack of psychological resilience as further risk factors adding weight to workplace risks (Chan et al., 2020; CIF Ireland, 2020; Li et al., 2022; Navarro-Abal et al., 2018). Individual circumstances such as workers' stressors outside the workplace (e.g. household socioeconomic status or past experiences), personal history (including previous injuries) and personality also matter when considering the impacts of occupational risk exposure on mental health.

2.5 Other psychosocial risks

Many mental challenges experienced by workers in construction are connected to the so-called industry-systemic causes (London et al., 2022) that determine the business flow and work pace of the profession. This section presents evidence on specific features of the sector acting as potential psychosocial stressors. They largely relate to the project-based nature of construction and structural and economic factors that make the sector particularly vulnerable to economic cycles and crises. Additional exposure is then explored through the lenses of different business sizes and workers' levels of professional experience in the sector.

Project tendering, management and organisational practices

Many sources in the literature define the project-based and tendering nature of this professional environment as psychosocial risk factors (EU-OSHA, 2013; Li et al., 2022; London et al., 2022; Flannery et al., 2019; Fagbenro et al., 2023; Duckworth et al., 2024; Tijani et al., 2020b; Lingard & Turner, 2023). To secure sufficient profit, construction companies are often compelled to compete for projects, manage multiple projects with competing deadlines, establish complex contractual relationships with specific service providers and engage workers in a variety of temporary contractual conditions. Different authors discuss the potential effects of these processes as stressors for various worker groups in the sector. For example, the project tendering process can be a stressor for managers and high-responsibility workers, as both revenue and contract continuity are strongly dependent on securing new projects (London et al., 2022).

The structural fragmentation of the sector when performing different construction activities (e.g. bricklaying, flooring, wiring and plumbing) commonly leads to subcontracting practices (in terms of both specific services and human resources), which is listed as an additional risk factor faced by workers (EU-OSHA, 2013; CIOB, 2020; London et al., 2022). While OSH practices may be enforced in the original bidding process, continuous reliance on subcontracting may not ensure the maintenance of OSH requirements further down the line of services performed on the same building site. A connected risk factor refers to a lack of appropriate and specific OSH provisions regarding mental health in the tendering criteria (London et al., 2022).

Poor budgetary decision-making (conditioned by competitive bidding) and consequent pressure on subcontractors in the supply chain may become additional factors in creating workload and work pace pressures, as described earlier (London et al., 2022; Li et al., 2022). Poor organisational management in planning and delivering materials (Jensen & Kofoed, 2002) can also be acknowledged as a risk factor, as the lack of raw and elaborate materials for performing activities leads to delays and even greater time pressures. Reaction to unforeseen circumstances (e.g. adverse weather events, delays) frequently reshapes processes to achieve end objectives. Thus, frequent changes to work specifications to meet uncertain and complex project conditions are further recognised as common risk factors for construction workers' mental health (London et al., 2022; Li et al., 2022; Fagbenro et al., 2023), enhanced by sometimes little or no consideration of workers' recovery requirements. The capability of a company to endure these workloads may ultimately depend on both business size and the availability of human resources, with workers in smaller companies more susceptible to suffering these stressors (Tijani et al., 2020b).

Late payments and cost pressures

Other risk factors for mental health are embedded in the structural economic features of the sector. On the one hand, construction companies and, hence, their workers are often affected by delayed payments from clients (CIOB, 2020). This can potentially stimulate financial and income insecurities for all businesses and professionals involved in construction activities. Due to the continuous need to invest and circulate money across multiple projects, and despite payment delays, cost pressure (for companies) is therefore identified as an additional stressor stimulating financial uncertainty (CIOB, 2020). The construction industry is particularly vulnerable to global economic cycles and crises, and it has been significantly affected by the cumulative effect of economic crises occurring over the past two decades (EU-OSHA, 2013; EESC, 2022; CIOB, 2020; Hulls et al., 2022; King & La Montagne, 2021; London et al., 2022; Flannery et al., 2019).

Professional status and business size

Some studies have looked at the mental health of higher-skilled management professionals in construction, focusing on psychosocial risk exposure and mental health outcomes of office workers, that is, architects, engineers and associated personnel in construction consulting firms. These higher-skilled groups of workers can incur risks of long working hours and time pressures, issues with work–life balance and perceptions of a lack of workplace support for teamwork (Tijani et al., 2020ba). A comparative analysis between construction site supervisors and low-skilled bricklayers in the Netherlands (Boschman et al., 2013) indicated that construction supervisors suffer from higher exposure to psychological demands at work than lower-skilled bricklayers. They also experience further discomfort due to reduced participation in decision-making and low social support from the company, which can become predictors of increased rates of depressive symptoms.

On the other end, lower-skilled workers in construction (including manual and trade service workers) can be a vulnerable category affected by specific psychosocial risks. Bricklayers, for example, more often experience a lack of job control, learning opportunities and career progression (promotion, career), involvement in decision-making and overall lower social support (Boschman et al., 2013). Some studies show that low-skilled workers may be prone to increased exposure to all the traditional psychosocial stressors identified in the sector (CIOB, 2020; Duckworth et al., 2024), whether task design, social and cultural relations, or job insecurity. A cross-sectional research study on psychosocial risk exposure performed in Latvia, including low-skilled construction workers (among others), revealed that this professional category has more worries about workplace conflict (first towards the employer, then colleagues and lastly clients) and is more prone to suffering psychological violence from employers

(Kozlova & Lakisa, 2016). The literature also pointed out that lower education levels lead to less awareness and knowledge of OSH practices (EU-OSHA, 2014; Vignoli et al., 2021), making it necessary to provide dedicated mental health training for these workers.

Self-employed workers have similarly been identified as an especially vulnerable category for work-related psychosocial risks. Indeed, these workers do not have organisational support behind them and are entirely reliant on their own work and business success. Thus, the literature signals self-employed workers as having increased exposure to job and economic insecurity (Bevan et al., 2022; CIOB, 2020), increased exposure to task-design stressors such as high workloads and long working hours (Bevan et al., 2022; CIOB, 2020), and less access to mental health services when compared to construction workers in organisational company environments (Bevan et al., 2022).

Additional evidence highlights the heightened psychosocial exposure of workers based on company size. In sectors dominated by SMEs, as is the case of construction in the EU, limited resources and a continuous pursuit of maximum productivity could result in inadequate staffing levels (CIOB, 2020). This, in turn, could lead to a lack of appropriate investments in workers' skills development to effectively perform their jobs and implement positive and safe OSH practices (EU-OSHA, 2014; Li et al., 2022; EFBWW & FIEC, 2019). Even in more favourable scenarios, there may be a lack of additional company resources dedicated to addressing mental health (Blake et al., 2023; Bevan et al., 2022). Furthermore, in larger companies, proactive approaches to managing psychosocial risks and wellbeing are more common than in SMEs. Policies or practices related to preventing or addressing mental health issues at work can be perceived as burdensome extra costs for a smaller company (Blake et al., 2023). Such statements are backed by ESENER data (EU-OSHA, 2022c), whereby 62% of surveyed companies mentioned 'lack of awareness among staff', 50% claimed a 'lack of expertise or specialist support' and 34% referred to 'lack of awareness among management' in a list of major obstacles in dealing with psychosocial risks in establishments.

2.6 Psychosocial risks for specific groups of workers

This section explores psychosocial risks from the perspective of gender and sexuality, age and migrant status, which have been identified as potential determinants of workers' psychological health and wellbeing in the construction sector.

Gender and sexual orientation

Regarding women in the sector, the literature highlights additional aggravating features of common stressors experienced by all workers in the sector (e.g. long and inflexible working hours; see Curtis et al., 2018, 2022; Hasan et al., 2021b). Women in construction appear to be more affected by poor working environments (CIOB, 2020; Curtis et al., 2022; Rotimi et al., 2023; Hasan et al., 2021b), linked to issues such as inadequate safety, privacy and personal hygiene due to poor toilet facilities. Dirty, small and often water-lacking facilities are identified as an extra source of distress. Female workers can be more affected by physical job strain than their male counterparts, due to biological differences in physical capacities (Curtis et al., 2018, 2022). Bodily limitations may be further exacerbated by ill-fitting personal protective equipment (PPE) for female workers (Curtis et al., 2018; Rotimi et al., 2023), increasing, for example, the fear of physical accidents. Overcompensation has been described as a gender-related risk factor for female workers (Curtis et al., 2018; Rotimi et al., 2023): women may feel the need to work doubly hard to be accepted and acknowledged as valuable by male employers and colleagues in the sector.

Women in the sector may face specific risks related to social, organisational and cultural factors. Women in the sector can be more vulnerable to work–life balance and work–family conflict (Curtis et al., 2018, 2022; Le François & Trottier, 2022; Rotimi et al., 2023). Gender-specific discrimination, sexism and other forms of harassment in the sector have been described (Curtis et al., 2018, 2022; Rotimi et al., 2023; Hasan et al., 2021b), including woman-to-woman discrimination (Hasan et al., 2021b), with some



women conforming to toxic masculinity and exhibiting biased and discriminatory behaviour towards their fellow female workers. These behaviours could even escalate to sexual harassment (Curtis et al., 2018; Rotimi et al., 2023), a notorious source of mental distress that manifests through verbal allusions or physical abuses, including inappropriate groping or touching.

At the organisational level, women may experience an increased lack of organisational support (Curtis et al., 2018; Hasan et al., 2021b) connected to the potential risks described above. Similarly, they may be subjected to lack of a climate of organisational safety that specifically addresses women's safety issues (Curtis et al., 2018; Hasan et al., 2021b), such as gender discrimination and sexual harassment. Other potential organisational stressors may include a lack of equal training opportunities compared to men, the absence of gender representation in the sector and a lack of role models (Rotimi et al., 2023), limited networking opportunities, and a lack of, or withholding, promotion and career opportunities compared to male workers (Rotimi et al., 2023; Curtis et al., 2022; Hasan et al., 2021b).

Job insecurity factors experienced by women in construction can act as further stressors. An example is 'glass ceilings', which refer to the systematic occurrence of lower salaries for women workers compared to men with the same level of professional responsibilities, or 'glass walls', meaning the presence of sexist recruitment practices and a preference for selecting and hiring male workers (Curtis et al., 2022; Rotimi et al., 2023; Hasan et al., 2021b). Women may also experience fear of dismissal for reporting concerns. Complaining about gender-specific discrimination could, in some cases, lead to hostility in the company and possible job loss (Curtis et al., 2022).

On the other hand, male workers are also vulnerable to some psychosocial risks and the occurrence of mental health outcomes. Toxic masculinity, mental health stigma and a reluctance to seek help are all psychosocial risk factors induced by a set of conservative values and norms already detailed in the previous section on social, organisational and cultural risk factors.

Studies concerning Lesbian, Gay, Bisexual, Trans, Queer and Others (LGBTQ+) workers in the construction sector are scarce. One study investigating the challenges faced by lesbians in construction revealed increased exposure to discrimination, bullying and harassment (Wright, 2013), and additional stressors related to self-presentation at work, including embodying masculine traits for team acceptance. The LGBTQ+ community remains significantly underrepresented in the construction sector, with UK data based on 24,000 construction employees revealing very small proportions of workers identifying as non-heterosexual (1% identified as bisexual, 0.8% as gay men, and 0.2% as lesbian). Discrimination is a persistent issue, with 39% of LGBTQ+ architects reporting hearing homophobic or transphobic slurs in the workplace over the previous 12 months (Fennell, 2021). By contrast, a survey of the EU LGBTI population by the European Union Agency for Fundamental Rights (FRA) revealed that only one in four workers hid being LGBTQ+ at work, whereas two in 10 felt discriminated against at work in the year before the survey (FRA, 2020).

Overall, the EU literature reveals a broader research gap on gender issues and mental health in construction compared to more established research lines in Anglo-Saxon countries.

Age

Both younger and older workers in construction face unique challenges that can impact their mental health and wellbeing. The primary work-related vulnerability of younger workers lies in their lack of work experience (Chan et al., 2020), which may relate to their capacity to manage stressors. Due to this, younger workers can be more susceptible to the influence of the prevailing builder culture, as described earlier (Chan et al., 2020; Ross et al., 2021, 2022). They may feel compelled to conform to cultural norms in the construction environment to prove themselves, potentially exacerbating other psychosocial stressors. They may also exhibit greater exposure to work–family conflicts, especially younger adults and middle-aged workers who are more likely to have a partner, children or other caregiving responsibilities (Franklin et al., 2022; Frimpong et al., 2022).

Younger workers' newcomer status and lack of experience could make them more susceptible to workplace bullying and harassment, being at the bottom of a traditional hierarchy sometimes dominating work organisation in construction sites (Ross et al., 2021, 2022; Pidd et al., 2017). Additionally, younger workers may face more impacts from stressors associated with extreme weather events (Xiang et al., 2014), as they are often assigned frontline roles involving physically demanding work and greater

physical resistance in general. This could lead them to be exposed to harsh weather conditions, resulting in adverse effects on both their physical and mental health. An additional risk factor related to age is connected to a lack of OSH leadership in construction (Chan et al., 2020). Inexperienced workers often depend on their company's attitude and commitment to OSH practices, and the possible absence or reduced adherence to OSH in the workplace could significantly impact their wellbeing. Younger workers have in general less knowledge or experience to identify and address safety issues, making them more vulnerable to workplace accidents and other work-related hazards with impacts on psychological health and wellbeing.

Older workers in construction have been identified as having an increased risk of exposure to specific psychosocial hazards. The baseline risk factor for older workers is the decline in physical capacity due to ageing in an often physically demanding sector. Therefore, they may experience increased physical strain and MSDs (Hoonakker & van Duivenbooden, 2010; Oude Hengel et al., 2012). While their experience is a source of resilience for many psychosocial stressors, the decline in physical capacity can lead to concerns about physical strain, especially when working in challenging postures. Age-related physical limitations could increase the risk of work-related injuries and generate mental discomfort. Older workers may also become increasingly exposed to low skill discretion, as the monotony of the job can sometimes become a significant stressor even for those with extensive experience (Oude Hengel et al., 2012). The repetitive nature of certain tasks may thus lead to decreased job satisfaction, affecting overall wellbeing. The same research considered that stimulating task rotation and committing to task diversity can be vital in alleviating low discretion for ageing workers (Oude Hengel et al., 2012).

Migrant status

In the contemporary European construction sector, migrant workers are often recruited to fill local labour shortages and could be at risk of facing challenging working conditions, particularly in manual and low-skilled roles more often involving hazardous tasks (Shepherd et al., 2021; Giraudo et al., 2017). When it comes to building tasks and working conditions, evidence in the literature shows that this group of workers are often assigned to tasks that are physically demanding and perilous, or considered dirty (Shepherd et al., 2021; Giraudo et al., 2017). Migrant workers frequently contend with unsafe conditions in the workplace and endure subpar working environments, engaging in strenuous and stressful labour. The literature even identifies 'regional' discrimination based on nationality as an additional stressor, with reports of heightened harassment for African and Muslim workers (Fagbenro et al., 2023).

Moreover, migrant workers experience amplified challenges in social relations, organisational dynamics and cultural factors that impact both their work and wellbeing. Language and cultural barriers within the workplace may contribute to a lack of understanding in work communication and task development, hinder effective training reception and impede cultural integration (EU-OSHA, 2014; Fagbenro et al., 2023; Vignoli et al., 2021; Giraudo et al., 2017; Ahmed et al., 2022). This can lead to reduced compliance with work rules and may be further compounded by religious barriers, that is, specific cultural differences associated with religious beliefs (Fagbenro et al., 2023).

Migrant workers, often lacking job experience in the destination country, tend to access low-skilled positions that are common in the construction sector (Giraudo et al., 2017). This situation, driven by a sense of need, is particularly pronounced among non-EU workers from low- and middle-income countries. The resulting job precarity and insecurity can influence their willingness to undertake hazardous tasks, work in riskier conditions and adopt riskier behaviours. Additionally, translated OSH training or the presence of cultural mediators is rarely provided, especially in smaller companies. The lack of occupational justice may further contribute to the vulnerability of migrant workers compared to those working in their home country. This could lead to a less supportive social context, inadequate training, challenges in workplace communication and limited investments in the safety of migrant workers (Giraudo et al., 2017).

Financial and job insecurity emerge as significant risk factors affecting migrant construction workers (Vignoli et al., 2021; Giraudo et al., 2017). Exposure to job insecurity is closely linked to fears about job loss, prompting migrants to more readily accept risky tasks. Moreover, job insecurity, intertwined with factors such as low contractual stability and lower salaries, serves as a common mental health stressor (Shepherd et al., 2021; Giraudo et al., 2017).

Certain structural factors in the construction sector contribute to the exposure of psychosocial risk factors among migrant workers in Europe (Shepherd et al., 2021). Findings from a comparative study encompassing Italy, Spain and the UK reveal that companies may at times seek 'cheaper' subcontractors, leading to employing migrant workers at lower wages. Such companies may also lack adjustment of OSH practices and requirements to needs pertinent to migrant issues (e.g. language barriers) (Shepherd et al., 2021).

An essential risk factor, although not directly addressed in the OSH literature, is related to the mental health burden and traumatic experiences that migrant workers have often experienced before arriving in the country where they work (Caroppo et al., 2014). Many migrants may have experienced highly stressful and traumatic situations both in their home countries and during the migration process to Europe. This may result in the pre-existing presence of conditions like PTSD or other mental health issues, heightening the vulnerability of these workers to additional psychosocial stressors at work.

2.7 Role of recent disruptors and current labour market trends

This section explores both unique stressors and intensified psychosocial effects in the sector associated with three ongoing or recent societal phenomena: labour market evolutions induced by digitalisation, climate change, and the recent COVID-19 pandemic.

Digitalisation

The reviewed sources noted an increase in cognitive demands for all professions in construction as an immediate consequence of the need and increasing pressure for further digitalisation in building activities. The identified psychosocial risk, defined as technology cognitive overload (Fagbenro et al., 2023; Duckworth et al., 2024; Rodriguez et al., 2020; Tijani & Feng, 2021; EU-OSHA, 2021), is deeply associated with the negative stress response that workers may develop against pressures for reshaping work processes through both digital and automated technologies.

A specific risk factor related to digitalisation in the sector is the increased demand for the use of mobile-ICT technologies, particularly in work requiring the use of smartphones, tablets and specialised apps on mobile networks (Hasan et al., 2021a). This demand can be connected (and potentially act as a multiplier stressor) to a series of traditional task-management and work-life balance psychosocial risk factors. These may include increased long working hours (since task execution and work communication can be performed outside regular working hours), increased availability during non-working hours (as mobile-ICT allows connection from virtually everywhere and at any time), an increased exposure from the inability to recover from work (relative to continuous work intrusion in resting time) and increased surveillance at work. Lastly, chances of a poorer work-life balance and increased work-family conflict arising from continuous connection to the work environment were also found.



Psychosocial risk factors related to the use of robotics and other technologies (e.g. machines, sensors) mostly appear to affect task development, workers' feelings and organisational matters. Additional dependence on tasks executed by machines could lead to an increased risk derived from low autonomy and a lack of job control (Tijani & Feng, 2021), along with an increased lack of skill discretion and overall job monotony (EU-OSHA, 2021). Higher rates of work performed by a reduced number of operators or even working alone with machines may lead to workers' feelings of alienation through physical and social isolation at the workplace (Tijani & Feng, 2021; EU-OSHA, 2021). Finally, a lack of specific skills may be an additional risk factor for all parties involved in the digitalisation process. On the side of the worker, a lack of safety skills for operating advanced technologies, a general lack of training in efficient and productive use of the machine (Tijani & Feng, 2021), and increased surveillance of workers resulting in higher workloads and reduced levels of autonomy (EU-OSHA, 2022b) may act as powerful psychological stressors. Meanwhile, a lack of leadership and management skills in orienting workers in digital implementation (Tijani & Feng, 2021), resulting in insufficient or an absence of company guidance on how to introduce and correctly employ these technologies, can result in a psychosocial hazard for the wellbeing of workers at all levels, including managers, in the sector.

Extreme weather conditions and climate change

Exposure to adverse weather conditions such as heavy rains or very high and low temperatures is common in construction work, especially when working in open (outdoor) or semi-open building sites. Likewise, construction workers may be indirectly affected by weather conditions in terms of work delays and their subsequent consequences. Climate change may act as an amplifier of the frequency, severity and unpredictability of extreme weather conditions, with substantial impacts on the construction sector and the wellbeing of its workforce.

Limited literature regarding the mental health effects of climate change on construction workers is available, calling for more evidence to be generated across Europe, where extreme weather events are becoming more prevalent. Most surveys on this topic have focused on heat stress and workers' physiological responses in low- and middle-income countries, mostly in tropical regions (Xiang et al., 2014). Several psychosocial risk factors have been associated with weather conditions and climate change, particularly those linked to extreme temperature conditions. General weather phenomena (such as heavy rain or snow) have the potential to disrupt building tasks, causing delays in construction projects (EU-OSHA, 2013). Furthermore, the connection to mental health lies in their capacity to act as additional stressors to those present in the sector, increasing the productivity and time-bound pressures already faced by construction workers. Climate change can act by itself as a work-related stressor, exacerbating adverse working conditions for outdoor workers (Xiang et al., 2014; Karthick et al., 2023).

A limited number of studies in this area have looked at psychosocial risk factors associated with extreme temperatures, particularly the exposure of workers to heat stress (Xiang et al., 2014; Karthick et al., 2022b; EU-OSHA, 2023a). Heat stress results from prolonged work in high-temperature environments during various construction tasks. Exposure to physical working conditions that generate body heat, such as use of machinery and powered tools, working on elevated surfaces, heavy workloads, internal body heat generated during work tasks and job insecurity, are additional factors prevalent in the sector that may exacerbate heat stress reactions (Xiang et al., 2014). However, some research suggests that exposure to extreme low temperatures can be equally damaging to construction workers' mental health: anticipated adverse outcomes of extremely low temperatures include psychological stress, disorientation, hallucinations, episodes of anger, lack of mental coordination, anxiety and depression (Karthick et al., 2023c).

Construction workers aged 55 years and older are more likely to be suffer from weather-related stress compared to younger workers, and female construction workers may be more susceptible due to physiological reasons. Some migrant workers might face acclimatisation problems while working in open environments. Finally, SMEs, due to their reduced resources, may be more vulnerable to extreme weather events, as they may be forced to stop working altogether.

The COVID-19 pandemic

The COVID-19 pandemic significantly impacted the construction sector and their workers, particularly on-site workers. Designated as 'essential business' by various governments, construction workers soon required a quick return to work, potentially exposing workers to an unsafe environment due to inadequate hygiene and safety conditions in the workplace. Dirty and dusty construction sites lacking access to running water heightened the risk of COVID-19 infection. Initial delays and slowdowns in building operations led to increased time pressures and unrealistic workload expectations, often resulting in extended working hours as construction workers tried to catch up with delayed operations (Kaluarachchi et al., 2022; Jin et al., 2023; Dickson, 2023; Pamidimukkala & Kermanshachi, 2021).

The pandemic intensified psychosocial risk factors associated with social relations in the workplace and work stress increased for an average of 35% of the European construction workforce (EU-OSHA, 2022b). Work intensification and restrictions on mobility and physical contact contributed to a worsened work-life balance (Kaluarachchi et al., 2022; Jin et al., 2023; Dickson, 2023; Pamidimukkala & Kermanshachi, 2021). Construction workers faced feelings of isolation and a lack of social interaction at the workplace (Kaluarachchi et al., 2022; Jin et al., 2023; Dickson, 2023; Pamidimukkala & Kermanshachi, 2021), both for on-site workers implementing social distancing measures and alternate shifts and for professional workers experiencing the effects of remote working (Jin et al., 2023; Pamidimukkala & Kermanshachi, 2021). These intensified risk factors could have led to increased

workplace conflict across various dimensions, including employer-to-employee, among colleagues and even with customers, due to the challenging working climate (Jin et al., 2023). The pandemic heightened mental health risks associated with job and financial insecurity, exacerbating the structural vulnerabilities of the sector to economic crises. The overall situation induced additional job precarity for construction workers, leading to an increased fear of job loss, especially for office workers, private contractors and self-employed individuals (Kaluarachchi et al., 2022; Jin et al., 2023; Dickson, 2023; Pamidimukkala & Kermanshachi, 2021). Even for those retaining their positions, wage insecurity was stimulated by an overall reduction in income and revenues for workers and companies (Jin et al., 2023; Dickson, 2023). Lockdowns and social distancing measures (although these varied from country to country) deeply impacted the construction supply chain overall, leading to frequent disruptions in both human and material resources, acting as an additional stressor for company owners and planners (Jin et al., 2023; Pamidimukkala & Kermanshachi, 2021).

Regarding specific groups of workers, some research has shown additional negative effects on vulnerable workers in the profession during the pandemic (Pamidimukkala & Kermanshachi, 2021). Older workers, who were more susceptible to virus contagion, struggled with technology, and they were ultimately exposed to more anxiety and negative emotions. Female workers were often burdened by additional household responsibilities, and migrant workers faced economic constraints, space constraints (e.g. home working and space in accommodation), family separation circumstances, lack of contact with friends and family due to long distances, and increased feelings of helplessness.

2.8 Impact of psychosocial risks on workers' health and consequences for workplaces

Adverse mental health outcomes in construction workers have been consistently associated in the literature with exposure to challenging psychosocial working conditions. This section describes the observed links between psychosocial risks and mental health, as well as with other health outcomes other than mental health, such as physical and behavioural responses, which can further predispose the individual to experience mental health problems. Finally, the organisational impacts of workers' mental health problems on workplaces are discussed.



2.8.1 Effects on mental health

A higher prevalence of anxiety, depression and suicide among manual and trade workers in the construction sector industry has been observed compared to the general population, potentially leading to other physical and behavioural outcomes such as substance abuse, poor workplace safety attitude and poor work performance (Duckworth et al., 2024).

Overall, a variety of effects related to adverse psychosocial working conditions on construction workers' wellbeing have been identified, including emotional and cognitive mental health symptoms as well as mental health problems, or suicide and substance abuse behaviours. In addition, this can result in negative effects at the workplace level affecting overall business continuity and productivity.

Emotional and cognitive mental health symptoms

Stress emerges as the most prevalent outcome in response to the various psychosocial risk factors identified in this overview. Most of the work-related psychosocial risk factors described in the literature (and together with their interconnected effects) were found to induce occupational stress (EU-OSHA, 2013; CIOB, 2020; Sun et al., 2022; Li et al., 2022; Powell et al., 2018; Sommovigo et al., 2021; Hulls et al., 2022). Occupational stress can lead to feelings of uncertainty and limited control (e.g. structural, financial). Dedicated studies have additionally pointed out an increased risk of mental stress experienced by women compared to men related to gender-based discrimination, which is in turn associated with anxiety and insomnia, feelings of marginalisation, exclusion, conformation to sexism, lack of self-worth, self-blame, guilt, self-silencing and social identity threat (Rotimi et al., 2023; Curtis et al., 2018, 2022).

Burnout, defined as prolonged occupational stress leading to emotional exhaustion, cynicism and reduced professional efficacy, is another significant reported mental health outcome (Sun et al., 2022; Li et al., 2022; Tijani et al., 2020b; Rodriguez et al., 2020), which is often linked to role conflict and job insecurity (Sun et al., 2022). A higher frequency of burnout was also observed among office workers in construction. A higher prevalence was observed among more skilled professionals in the construction site compared to those working in remote offices and among office workers on the contractor's premises than among workers from external consulting firms (Tijani et al., 2020b).

Anxiety was frequently reported in the published literature (CIOB, 2020; Powell et al., 2018; Duckworth et al., 2024; Tijani et al., 2020b; Hulls et al., 2022), followed by both physical and mental fatigue (CIOB, 2020; Powell et al., 2018; Sommovigo et al., 2021). Sleep disturbances, including sleep deprivation, interrupted patterns or outright insomnia, were also identified (Bevan et al., 2022; Li et al., 2022; Powell et al., 2018; Hulls et al., 2022). Additionally, feelings of irritability and anger were commonly described (Bevan et al., 2022; Jin et al., 2023), often associated with the inability to control unforeseen circumstances or specific events, such as project delays or coping with extreme weather events.

To a lesser extent, the literature additionally mentions overwhelming feelings and a lack of self-confidence (CIOB, 2020), experiences of high pressure and loneliness (Li et al., 2022), or thoughts of self-harm (Bevan et al., 2022) as additional emotional responses to occupational stressors in the construction sector. The cognitive impacts of psychosocial risk factors were less explored, with only a few published studies referring to issues such as poor concentration and worker distraction (CIOB, 2020; Duckworth et al., 2024) or an increased tendency towards risk-taking behaviour at work (Duckworth et al., 2024).

Mental health problems and suicide

A prevalent adverse mental health outcome documented in the literature is depression (CIOB, 2020; Chan et al., 2020; Duckworth et al., 2024; Tijani et al., 2020a; Rodriguez et al., 2020), which is particularly prevalent among office-based construction professionals (Tijani et al., 2020b) and specifically associated with low job control and support for on-site workers (Chan et al., 2020).

Notably, the literature highlighted the possible occurrence of PTSD and its higher prevalence in construction compared to other sectors (Chan et al., 2020; London et al., 2022), along with the experience of panic attacks, which, in some studies, are more commonly observed in female workers (Rotimi et al., 2023; Powell et al., 2018). Underlying reasons for the occurrence of these severe mental health outcomes are possibly related to the high-risk environment of on-site construction work given the sector has the second highest incidence of fatal accidents at work in the EU (Eurostat, 2024). Exposure to poor physical working conditions that pose a heightened risk of danger can also impact workers' perceptions of safety, risk and their anxiety levels. Hence, if OSH does not properly address the hazardous features of construction work (e.g. working at heights, handling heavy machinery, exposure to hazardous materials), this may, in addition, lead to accidents causing severe injury, fatalities or other disasters, which will contribute to the worsening mental health of the workforce.

A higher occurrence of suicide rates among male construction workers compared to the general population has been reported, with most of the evidence coming from Anglo-Saxon countries. A global review by including EU and Australian studies reinforces reported suicide as one of the most frequently cited outcomes of poor mental health among manual and trade construction workers (Duckworth et al., 2024). The British charity *Mates in Mind* reported that men working in construction are three times more likely to die of suicide than the male national average. In Ireland's and the UK's construction industry, it is estimated that two people commit suicide every working day, totalling over 700 workers per year (Garbett, 2023). Furthermore, the UK's Construction Industry Training Board (CITB) provides similar statistics, emphasising that suicide often surpasses fatalities from falls from heights in the sector, with the risk of suicide among certain site-based male construction workers being three times the national average. Skilled finishing trades, such as painters and plasterers, faced a suicide risk twice the national average (CITB, 2021). In addition, the British Office for National Statistics data show that a striking 26% of surveyed workers considered taking their own life in 2019 and that over 1,400 construction workers committed suicide between 2011 and 2015 (Bevan et al., 2022; CITB, 2021). Meanwhile, in Australia, a statistical analysis of suicide trends among construction workers from 2001 to 2019 revealed an overall age-standardised suicide rate of 26.6 per 100,000 persons, compared to 13.2 per 100,000 for male

workers in other occupations (Maheen et al., 2022). However, an overall decline in suicide rates among Australian construction workers over the last two decades was also observed, which could be related to suicide prevention initiatives like *Mates in Construction*, which is described in more detail in a recent EU-OSHA report (EU-OSHA, 2023b).

Ross et al. (2022) investigated suicidal ideation in a large sample of construction apprentices in Australia, finding that nearly one-third of apprentices had thoughts of suicidal ideation in the year preceding the study. This same study found that suicidal thoughts and ideation was strongly associated with knowing someone who had attempted or completed suicide (64% and 55% of respondents, respectively). The pandemic itself was not used as a research variable, however, it is possible that it increased respondents' exposure to suicide, which may have contributed to the desensitisation and destigmatisation of the subject, especially among younger workers (Ross et al., 2022). Indeed, an earlier study by Chan et al. (2020) equally observed that young workers may be more influenced by the suicidal behaviours of their surrounding peers, as negative models of extreme coping strategies can exert a more potent influence on individuals with less working experience.

Research conducted in Europe reveals a significant gap in updated statistical data on suicide rates and suicidal ideation among construction workers in the EU. The literature additionally lacks a unanimous perspective on specific risk factors for suicide in this population, providing only some indications of potential causes related to suicidal behaviour. Suicide is generally viewed as an additional adverse mental health outcome resulting from exposure to the traditional psychosocial risk factors previously examined (CITB, 2021; Duckworth et al., 2024). Finally, job insecurity appears to be a relevant risk factor contributing to suicidal behaviour among construction workers. Prolonged periods of financial struggle resulting from job insecurity and transitional unemployment are considered potential factors that could lead construction workers with reduced coping strategies to contemplate or commit suicide (Milner, 2017; King & La Montagne, 2021).

Certain behaviours associated with psychosocial risks may either be symptomatic of or conducive to poor mental health. Substance abuse, including both alcohol and other drugs, is the most frequently discussed outcome (Bevan et al., 2022; Flannery et al., 2019; Duckworth et al., 2024; Tijani et al., 2020b; Chapman et al., 2020). The psychosocial determinants of this behavioural response are linked to task design and working conditions, as well as to cultural tolerance towards this negative coping strategy in the work environment. Additionally, one study reported on the use of psychotropic medication in construction workers, drugs that can affect a person's mood, behaviour, perception and thoughts, as another behavioural outcome linked to mental health issues (Bevan et al., 2022). The risk of resorting to maladaptive stress management strategies and coping behaviours, such as substance abuse, is also reported to be higher among younger workers, who may experience less support from their working environment. Altogether, the lack of social support has been correlated with higher illicit substance use (Le et al., 2023; Chan et al., 2020).

2.8.2 Impact of recent disruptors and labour market trends

Some of the mental health problems associated with digitalisation include classical stress responses (Tijani & Feng, 2021; Hasan et al., 2021a), MSD complaints (Tijani & Feng, 2021), digital fatigue, burnout and various specific forms of 'technostress' (EU-OSHA, 2021). Moreover, in a recent EU-OSHA survey, construction workers shared that the use of digital technologies in their workplace increases their workloads (30%), determines the speed of their work (47%), increases surveillance (34%) and leads to lone working (39%) (EU-OSHA, 2022b). These issues were not unique to the construction sector's workforce, and in all cases, the impact of digital technologies on construction workers was below average compared to other sectors of the EU economy (see EU-OSHA, 2022b p. 14 for comparisons).

Regarding extreme weather events, the potential psychological and behavioural consequences of prolonged heat exposure at work include physical fatigue, irritability and anger; lethargy, impaired judgment; vigilance decrement; loss of dexterity, coordination and concentration; anxiety; and depression (Xiang et al., 2014; Karthick et al., 2023). Vice versa, adverse impacts of working in extremely low temperatures include psychological stress, disorientation, hallucinations, episodes of anger, lack of mental coordination, anxiety and depression (Karthick et al., 2023).

The impact of the COVID-19 pandemic on the EU's construction workforce appears to have been minimal, according to an EU-wide survey that found that construction workers were among the least affected by workplace stress during the pandemic (EU-OSHA, 2022b). Equally, a below-average percentage of respondents (35%) reported that their stress levels had increased due to the COVID-19 pandemic compared to the EU average (44%). However, the prevalence of overall fatigue (38% compared to the EU average of 37%) and musculoskeletal pain (33% compared to the EU average of 30%) increased slightly in the preceding 12 months of the survey. While this study did not explore pandemic-related mental health outcomes, a UK study found that suicidal thoughts and feelings of loneliness and isolation increased in the construction workforce during the pandemic (Kaluarachchi et al., 2022). Similarly, stress, loss of self-esteem (inability to handle problems), loss of productivity and concentration, irritability, or poorer worker wellbeing and anxiety were some health outcomes associated with the pandemic among Australian construction workers (Jin et al., 2023; Dickson, 2023).

2.8.3 Physical health problems

Physical problems that may arise due to exposure to psychosocial risk factors in the construction sector can themselves be risks for poor mental health. These can include the development of MSDs (Bevan et al., 2022; Anwer et al., 2021; Ajslev et al., 2017), encompassing problems such as back, neck or shoulder pain, as well as the potential onset of arthritis, joint pain or eye strain (Bevan et al., 2022). Mechanisms explaining the associations between these physical outcomes and mental wellbeing have been identified in the published literature and discussed earlier in this report. The literature additionally highlights an increased risk of occupational injuries as a direct consequence of exposure to psychosocial risk factors in construction workers (Duckworth et al., 2024; Giraudo et al., 2017). Some studies suggest that workers may experience more frequent headaches or migraines as another potential physical consequence resulting from exposure to psychosocial risks at work (Bevan et al., 2022; Rotimi et al., 2023).

2.8.4 Organisational impacts

The negative impact of workers' poor mental health on organisational outcomes within companies in the sector is an important area of research. It may have a larger impact on business productivity and the overall economy than traditionally estimated, given the underreporting of mental health outcomes. This is particularly relevant in construction, given the heavy dependence of the sector on its workforce for the successful execution of construction activities.

The identified evidence underscores the significant impact of mental health issues on the risk of employee turnover, a term used to describe an employee's reported willingness to leave their organisation within a given period (Lazzari et al., 2022), as highlighted by multiple studies (Bevan et al., 2022; Li et al., 2022; Le François & Trottier, 2022; Rotimi et al., 2023; Tijani et al., 2020b). This connection is rooted in diminishing trust in the organisation and increasing wellbeing concerns among workers. Furthermore, experiencing burnout at the workplace significantly contributes to the likelihood of job turnover, as in the case of office-based construction workers (Tijani et al., 2020b).

The detrimental impact of absenteeism on workplaces, understood as the prolonged sick leave absence of an employee from work related to a variety of causes such as heavy physical work (Merriam-Webster, 2023; Alavinia et al., 2009) is well-established in the literature (Duckworth et al., 2024; Rotimi et al., 2023; Alavinia et al., 2009).

Similarly, presenteeism is recognised as a potential negative organisational outcome (CIF Ireland, 2020). This refers to the practice of staying at work longer than usual or going to work when you are ill to demonstrate your dedication (Cambridge Dictionary, 2023). In the construction sector, it can be associated with a toxic masculinity culture (Powell et al., 2018) and influenced by job insecurity (Duckworth et al., 2024). Additionally, the literature suggests a decrease in worker productivity attributed to mental health outcomes (CIF Ireland, 2020; Tijani et al., 2020b) and a growing lack of trust in the organisation (Li et al., 2022) as further negative organisational outcomes for construction businesses. Gender-based studies have observed turnover intentions and absenteeism as specific organisational outcomes for women workers in the construction sector (Rotimi et al., 2023; Hasan et al., 2021b). In instances of pronounced work–family conflicts, men may contemplate changing jobs to regain a more substantial role as husbands and fathers (Le François & Trottier, 2022).

An inquiry was conducted in 2020 by the Construction Industry Federation of Ireland (CIF Ireland, 2020) to gather perspectives from construction companies' employers and to understand the organisational impacts of workers' poor mental health. The study, involving 301 affiliated companies, reported that 23% of construction companies experienced absenteeism due to mental health reasons, and 49% acknowledged mental health issues as a key factor in absenteeism rates. The occurrence of presenteeism was reported by 13% of Irish construction companies. Furthermore, around 23% of national construction businesses reported a decrease in productivity levels due to the mental health concerns of at least one employee.

2.9 Protective factors for mental health and determinants of job engagement and satisfaction

Overall, employment and work contribute to good mental health and wellbeing for most individuals (Waddell & Burton, 2006). Certain occupational factors can act as countermeasures against risks in the work environment. Some researchers have explored specific determinants for 'meaningful' work specifically in construction. These include individual factors, organisational factors, structural adjustments and their connections.

Personal factors

The literature emphasises the crucial role of social support from both family members and friends (Bevan et al., 2022; Duckworth et al., 2024) in safeguarding workers' mental wellbeing and mitigating issues such as depression and suicide. A study underscores the significance of self-compassion (Kotera et al., 2019) as a substantial mediator and protective factor, mitigating the impact of mental health shame and averting adverse mental health outcomes for workers in the sector.

Work experience is another well-acknowledged protective factor (Chan et al., 2020; Navarro-Abal et al., 2018; Giraudo et al., 2017), providing older workers with the cognitive and emotional tools necessary to endure and cope with exposure to psychosocial risks, described earlier. Feelings of job satisfaction also play a crucial role. On the one hand, satisfaction in construction work may stem from a sense of purpose in contributing to the development of tangible and visible infrastructure for society, leading to greater career satisfaction (as seen in EFBWW & FIEC, 2019). On the other hand, these feelings are linked to job security, which encompasses a regular income and stable contractual conditions (Kozlova & Lakisa, 2016).

Organisational factors and interventions

Regarding task design and execution, there is a consensus in the literature that construction workers, particularly those in low-skilled and on-site roles, should be provided with increased job autonomy and control (EU-OSHA, 2013; EFBWW & FIEC, 2019; Chan et al., 2020; Li et al., 2022; Xiang et al., 2014; Sommovigno et al., 2021). Low autonomy and control at work have been identified by some authors as primary psychosocial risks contributing to construction workers' mental health challenges (Chan et al., 2020). The concept of self-pacing work has been suggested as a potential solution to endure work under extreme weather conditions (Xiang et al., 2014). Similarly, other authors have emphasised the positive impact of reducing workload, encompassing both the dimensions of work pace and job pressure (Le François & Trottier, 2022; Ajslev et al., 2017; Sun et al., 2022). One study concluded that high job demands generally lead to more adverse mental health outcomes compared to low job resources (Sun et al., 2022). Furthermore, there is a call by EU social partners to provide greater diversity in task execution among construction workers (EFBWW & FIEC, 2019) to counteract monotony and enhance skill discretion, thereby maintaining acceptable levels of motivation and engagement.

Understanding the roles, outcomes and protective factors related to work-related psychosocial risk exposure is crucial for designing effective workplace interventions to promote better mental health (Harvey et al., 2017). Moreover, there is a necessity to explore innovative interventions that go beyond traditional, detached, anonymous and performative self-help tools like leaflets, helplines and informative websites. Although these tools have the potential to raise awareness, they often fall short in addressing the root causes of work-related stress, as highlighted in some studies (Hulls et al., 2022; Bevan et al., 2022).

Targeted interventions aimed at improving social and organisational relations at work can enhance the protective factors identified in the literature. Effective support from managers or supervisors is considered a solution to promote work–life balance and reduce worker stress, even in the face of high workloads (Le François & Trottier, 2022; Sommovigno et al., 2021). Research underscores the positive impact of team building among construction workers within the same unit (Hulls et al., 2022), achieved through joint activities fostering friendly banter and camaraderie (e.g. sports clubs, social events). However, it is important to note that these types of initiatives may be compromised by other prevalent factors, such as lengthy commutes or excessive workloads.

Specific training to improve mental health has been identified as a protective factor against psychosocial risks (Li et al., 2022; Hasan et al., 2021a). Examples applied in the construction sector include mindfulness techniques, which have enabled workers to focus on their tasks, reduce distractions from loud noises and co-workers, and alleviate their fear of unemployment (Li et al., 2022). Additionally, creating a positive perception of a safe and supportive working environment through rule-oriented and participative practices is noted to contribute to worker engagement and wellbeing (Grill et al., 2017; Hasan et al., 2021a).

To enhance the mental health of workers, companies can implement recommendations based on the identification of protective factors related to career and employment stability. The literature emphasises the importance of providing opportunities for career development as a driver of job engagement by offering the potential for improved salary and professional status (Li et al., 2022; Hasan et al., 2021b). In cases where such opportunities are not available, companies should ensure an acceptable level of job security for workers (Li et al., 2022; Kozlova & Lakisa, 2016), as regular income and salaries play a crucial role in stimulating worker engagement and job satisfaction. Additionally, establishing a system of incentives, such as compensations and awards, during periods of competing deadlines and high work pressure could support workers' wellbeing (Li et al., 2022).

Structural adjustments

Structural adjustments, such as policy and procedural updates, organisational changes, physical modifications and safety enhancements, can be implemented in the construction sector to reduce workers' overall exposure to psychosocial risks. One study emphasised the significance of ensuring that OSH standards are embedded in tendering criteria (for example, similarly to what is done with sustainability criteria) as a transformative condition in the industry (London et al., 2022). Multiple stakeholders across the sector would be prompted to prioritise workers' wellbeing if encouraged to do so through new procurement processes for awarding contracts. These should include OSH provisions for psychosocial risks and mental health down the supply chain.

Certain authors have emphasised the need to innovate production techniques in the construction sector to mitigate both physical and mental health risks (Fagbenro et al., 2023). They propose adopting methods like prefabricated construction in closed production spaces. This approach involves manufacturing individual building or infrastructure components in enclosed production sites and assembling them on-site. According to the authors, this method can effectively address some of the risk factors identified in this overview. Benefits include process standardisation, decreased ergonomic demands, enhanced OSH surveillance, improved working conditions (such as avoiding dirty environments and exposure to extreme weather), and a reduction in work pace and pressure. However, new risks may arise because of these changes, which would need to be thoroughly assessed and evaluated.

Lastly, the role of digitalisation and automation in the sector can also act as a protective factor against psychosocial risk exposure (EU-OSHA, 2021; Nelumdeniya et al., 2023). If specific risk factors associated with digitalisation are addressed, new technologies such as 3D printing (to accelerate productivity and reduce construction times) and robotics (to handle heavy and dangerous tasks) present tangible opportunities to decrease job strain and the development of MSDs in the sector. Digitalisation can also reduce the need for long working hours and constant availability for work, ultimately slowing down the hectic nature of construction work.

3 Stakeholder interviews

3.1 Objective and participants

In total, five semi-structured virtual interviews were conducted to gather the views of EU social partners in construction (workers and employers) and a few other stakeholders in the sector. Interview respondents included two representatives from the EU social partners, one policy advisor from an EU-wide research network, and two university-based occupational health professors who worked on projects and initiatives supporting workplace mental health in the construction sector, including one from outside Europe (see Table 3).

The objective of the interviews, of an approximate duration of one hour each, was to gather qualitative evidence coming from important stakeholders in the sector on the topic of psychosocial risks and mental health in construction, focusing on their main causes and particularly on the most effective prevention and management strategies perceived by the respondents. The full interview questionnaire is provided in Annex 1.

Table 3: Candidate profiles for stakeholder sectoral interviews

Description	Job position of respondent	Gender	Region/country
EU Social partners (workers)	Policy officer	Male	EU
EU Social partners (employers)	Policy officer	Female	EU
EU-level organisations and networks, university/academia	Senior lecturer and director of MSc occupational health	Female	EU
EU-level organisation/network	Policy advisor	Male	EU
Non-EU organisations	Chair of research reference group	Male	Australia

Participants provided their views on main psychosocial risk factors in construction and their impact on workers' mental wellbeing. They listed some examples of strategies and approaches tackling psychosocial risk factors for promoting positive mental health in the sector and discussed some challenges and barriers, including demographic and organisational challenges. They further provided recommendations and suggestions on how psychosocial risk management, affecting mental health, could be improved in the sector.

It is important to note that the conclusions presented in this section are based on the answers to a small number of interviews. The views reported below are solely those of the respondents, which are anonymised due to data privacy protection, and have been summarised below by the authors of this report by relevant areas or topics.

3.2 Psychosocial risk factors

3.2.1 Building tasks and working conditions

Respondents noted that work pressure and tight deadlines have a substantial impact on mental health in the sector, in line with what is reported in the published literature (e.g. CIF Ireland, 2020; Bevan et al., 2022). Half of the interviewees stated that work pressure and time constraints are significant issues that have a substantial impact on employers and workers' mental health. Deadlines, workload levels and adverse weather conditions affecting job security were believed to not only impact workers' overall

wellbeing but also their job satisfaction. External factors contribute to deadlines and time pressures, impacting worker stress levels.

“... workers and even employers can have mental health issues. Of course, you have to respect tight deadlines. Sometimes, you are also facing external pressure, like if you have a shortage of materials or bad weather and you cannot do your work. So, it adds a lot of pressures and you have sometimes a lot of work ongoing at the same moment and it can be difficult to cope considering the timeline and the deadlines. I think that’s difficult because you don’t always have hands on all factors. So yes, sometimes it is bad luck, and it just adds pressure because also, if you are not finishing your work, you are not paid. So yes, you have this work pressure. I would say that is quite important.”

As heightened attention to detail is required by workers to avoid accidents and injury, soft skills are required to manage tight deadlines and workplace safety. However, it is well known that deadline pressures can reduce workers’ capability to manage hazardous conditions, as highlighted by one respondent:

“... hazardous conditions ... pose serious health risks and require stringent safety measures ... pressure to meet deadlines adds another layer of risk ...”

High-risk work was likewise reported as having a significant impact on workers’ wellbeing. In the opinion of three interviewees, daily exposure to noise and other environmental health hazards is detrimental to workers’ mental health. One respondent said that the workforce may not consciously acknowledge or recognise the risky nature of construction work, an observation that did not emerge within the literature reviewed. The lack of conscious acknowledgement of the impact arising from the high-risk work may be associated with the social norms and workplace culture in the construction sector, with a strongly male-dominated workforce.

Likewise, two interviewees recognised that the physically demanding nature of construction work had substantial impacts on workers’ mental health. In concordance with the literature reviewed, the risk of developing MSDs and other health issues was pointed out. However, workers’ adherence to health and safety requirements was noted to be a particular challenge.

“... there are rules, and they have to wear protective equipment, but it’s not always the case if they don’t follow the rules. And we all see sometimes workers without helmets or safety gear in summer or this kind of stuff, and it’s difficult to sometimes look at every work site and make sure that every worker respects this.”

In comparison, one respondent noted that the physically demanding nature of construction work may also have a positive effect and be a protective factor in mitigating risks from adverse psychosocial environments:

“While construction work has a high impact on physical health, its impact on mental health might be lower. Some people I talk to, they like the physical aspect of construction work, so it can even have a positive impact to some degree.”

3.2.2 Socio-cultural norms and interpersonal relations

When considering social and cultural norms, recurring themes that emerged included the male-dominated nature of the sector, managing multicultural dynamics, a general emphasis on physical rather than psychological stressors, OSH risks and workplace isolation.

Workplace social support was a recurring theme mentioned during the interviews, in line with the evidence in the literature (e.g. CIF Ireland, 2020; Sun, 2023). The availability of social support in the workplace is disrupted by frequent team changes and changing working environments, factors unique to the construction sector. For most respondents, dispersed construction sites, the absence of a consistent team and project work exacerbate the impacts arising from a lack of workplace social support. Equally, respondents emphasised that workers' wellbeing is linked with feelings of connection with teams and organisations. Replicating literature findings (e.g. Li et al., 2022; CIOB, 2020), all these factors emerged as inhibitors of peer relationships, potentially leading to diminished trust levels among colleagues and with supervisors. Collaboration and teamwork can be subsequently affected by feelings of disconnection, ultimately impacting organisational outcomes.

“The contingent nature of work in this industry, with frequent changes, contributes to a lack of a consistent team environment. This absence of a sense of working together, being peers, and having trusted colleagues and supervisors due to the changing nature of work is a distinctive challenge in the construction sector.”

Social support is intrinsically connected to communication. Barriers to effective communication are not limited to dispersed coordination but are also linked to language and cultural differences according to the literature. The presence of language barriers was considered a significant worry by one respondent, posing additional risks to the workforce. Similarly, for another respondent multicultural dynamics and efforts to integrate immigrant workers in the sector may lead to intra-group tensions.

“Language barriers are significant stressors, especially when dealing with diverse workers who speak different languages.”

Non-verbal communication is key to workplace dynamics influencing workplace attitudes, cultures and norms, particularly those related to mental health. Two respondents mentioned that the male-dominated culture in the construction sector, for example, inhibits help-seeking, prevents displays of vulnerability and thus creates a difficult environment to discuss mental health issues, similarly to what is reported in the literature (CIF Ireland, 2020; CIOB, 2020; Li et al., 2022; Ross et al., 2022). In some cases, pervasive masculine attitudes may even impact workers' awareness levels about psychosocial risks and workplace stressors. Connected to this, workplace health and safety initiatives tend to prioritise physical risks and not psychosocial wellbeing. Psychosocial risk management needs to be considered and treated in the same way as the management of physical OSH risks.

“... risks such as falls from scaffolds or exposure to chemicals are more immediately life-threatening, psychosocial risks and mental health tend to be sidelined. This is a concerning trend that needs to be addressed ...”

In contrast to findings in the literature, the impact of workplace social and cultural norms on external social support (i.e. support from family and friends), work–life balance and intimate relationships was explicitly mentioned only for migrant, including posted, workers in the interviews. Challenges arising from organisational weaknesses (e.g. lack of feedback, internal communication and leadership concerns) were not discussed by the interviewees.

3.2.3 Socioeconomic factors

While the literature identified low pay and financial instability as interdependent risk factors, job and financial security and social-economic factors were more closely intertwined in the opinion of interviewees. Vulnerability to macroeconomic and market changes and the ensuing uncertainty are considered normal phenomena in the sector. Being highly sensitive to changes in the national and wider economic climate, the availability of job opportunities fluctuates according to demand for construction work. Thus, not surprisingly, the interconnection of job insecurity with the social-economic context was highlighted.

“As we can see now with the high inflation rates, people may sometimes postpone their construction works. In this case, there’s a lack of job opportunities, and the market demand and supply are low.”

Vulnerability to economic recession is an overall issue for the sector impacting job security, a critical psychosocial risk warranting attention and intervention according to most interviewees. Short-term contracts, which contribute to stress, are the norm, especially for smaller construction companies, which make up a vast proportion of the sector. The prevalence of subcontracting practices and issues associated with undeclared work are other factors contributing to job and financial security, according to interviewees.

The complexity of addressing socioeconomic factors was viewed as a substantial challenge for the sector. Wider societal changes, such as the demographic and industrial transitions, are posing specific challenges in construction. For workers specifically, the intensification of work and inflation were mentioned as critical conditions affecting mental health. At the sectoral level, the demographic transition is testing the ability of employers and managers to attract and retain adequately skilled workers. The impacts of a declining workforce will likewise affect workers in general, as reduced teams will increase workloads and the need for workers to acquire wider skillsets. Thus, the changing workplace context is likely to heighten workers’ exposure to psychosocial risks and affect recruitment of new workers in the sector.

“The construction sector faces challenges related to its reputation and attractiveness to young workers, compounded by an ageing workforce. This demographic shift poses risks to both the wellbeing of older workers and the sector’s ability to attract new talent. Additionally, the evolving skill requirements in the construction industry contribute to the complexity of addressing socioeconomic factors.”

3.2.4 The fourth industrial revolution

The widespread introduction and impact of digitalisation, AI and environmentally sustainable practices in all areas bring benefits and challenges for the construction sector. A key characteristic of the current so-called fourth industrial revolution is the need to ensure that workers are properly trained to operate new technologies (McKinsey, 2022; World Economic Forum, n.d.). Indeed, three interviewees highlighted that digitalisation of the industry demands constant upskilling and adaptation by workers. Moreover, the ability to operate complex new machinery was highlighted as a pressing concern for workers' wellbeing. This observation could be connected to literature findings about safety concerns linked to a lack of training and skills to safely operate new digital equipment and machines (Tijani & Feng, 2021). According to more than half of the interviewees, skill gaps could have a moderate to high impact on mental health, as feelings of discomfort may arise when a worker needs to handle a new tool they are unfamiliar with. Almost all respondents noted that for companies to thrive workers must be educated to understand and navigate the fast-paced changes currently underway.

“Skill gaps resulting from the technological revolution are a pressing concern for the construction sector. The industry is undergoing rapid digitalisation, requiring workers to possess advanced digital skills such as proficiency in building information modelling (BIM) and the ability to operate complex machinery. Moreover, skills related to energy efficiency and emerging technologies are becoming increasingly important. Bridging these skill gaps is essential for the sector to adapt and thrive in the digital age.”

Aside from stress arising from skill gaps, interviewees identified additional risks to be minor, in contrast to literature concerns, given the widespread use of computers and smartphones already in society. The emphasis was rather on the benefits of AI and digital tools to enable positive outcomes such as improving site management capabilities, supporting efforts to provide good work environments, and ensuring that health and safety rules are respected. Additional benefits mentioned by respondents include supporting reductions in physical risks to workers, such as decreasing the need to manipulate heavy loads and enter hazardous environments (e.g. tunnels).

Sustainability, notably limiting consumption and reducing waste and emissions, is another key feature of this revolution. According to one respondent, a potential additional stressor related to this green transition is the demand for relevant qualifications, such as knowledge and skills related to the use of specific materials and the energy efficiency of buildings. Overall, it was felt that aspects of this revolution are common to other sectors whose workers are experiencing similar workplace stressors.

“They are not unique to the construction sector because we can see that they are also present in other sectors. Maybe that they occur all together it can be quite unique to construction, but I’m not sure, because when we look at, for example, healthcare or the agricultural sector, the industrial or manufacturing industry or this kind of work, I would say we could find many of the same factors ...”

3.2.5 Groups at higher risk of psychosocial risk exposure

Women, low-skilled workers and migrant workers were identified by interviewees as specific groups at greater risk of exposure to psychosocial risks in the sector. According to one respondent however, the awareness and visibility of risks to other worker groups may be underestimated by the tendency of existing evidence and research to focus on specific groups of workers.

“While discrimination in this male-dominated environment may pose a risk for women, recent literature lacks substantial information on this aspect. The primary focus, supported by statistical evidence, centres on migrant workers, illegal workers and those with low skill levels.”

As highlighted by the literature, the male-dominated nature of the sector was mentioned by interviewees, recognising that a ‘macho’ culture can pose potential health hazards. For example, existing gender disparities, such as lower levels of job control among women compared to men, show ongoing issues linked to sexism. However, risks to women were not believed to be an industry-specific issue and are common to other areas of economic activity.

Migrants were stratified into two groups by the interviewees: posted workers and non-EU migrants. One respondent specifically spoke about the challenges posted workers experienced during the COVID-19 pandemic, while another respondent highlighted the overall risks posed to migrant workers. Nevertheless, common psychosocial risks are identified for all migrants, including family separation, impact on work–life balance, and language and cultural barriers leading to feelings of isolation and loneliness.

“Concerns related to mobility, recognition of skills and the posting of workers highlight the challenges faced by migrant workers in the construction sector. The posting of workers in particular, poses significant risks, as it often involves long periods away from home and issues with skill recognition across different jurisdictions.”

Meanwhile, while regulations and directives such as the Posted Workers Directive² exist to ensure the equal treatment of workers, this does not occur in practice according to two of the respondents. During the COVID-19 pandemic, inconsistent implementation of the directive was a stressor for workers and companies alike. Lack of information on posting regulations and requirements in the posted worker’s native language was highlighted as a psychosocial risk. This risk was exacerbated during the pandemic. Additionally, posted workers experienced mobility restrictions, social protection gaps and challenges accessing sick leave benefits while unwell abroad during the health crisis.

“... For instance, in Italy, there were issues with accessing sick leave benefits for workers who fell ill while abroad due to the lack of a local agency to facilitate the process with the National Institute for Social Protection. Similar problems were reported in other countries ...”

Awareness of the risks to migrants’ wellbeing appeared to have increased because of the COVID-19 pandemic. Two interviewees suggested that informational workshops on the directive, hotlines and the availability of translated information in construction worker languages could help reduce stress of construction workers when posted abroad. Additionally, improved support mechanisms and crisis

²The Posted Workers Directive 96/71/EC of the European Parliament and Council is concerned with the free movement of workers in the framework of the provision of services available within the European Union. Available at: [Directive - 96/71 - EN - Posted Workers Directive - EUR-Lex \(europa.eu\)](https://eur-lex.europa.eu/eli/dir/1996/71/oj)

management strategies were encouraged in the case of emergencies. If implemented, such initiatives can be equally deployed and used by the wider migrant workforce in the sector (not only posted workers) to alleviate psychosocial risks and empower workers to understand their rights and entitlements. Finally, low-skilled workers were mentioned by one participant as another high-risk group due to working conditions, contingent contracts and poor job security.

3.3 Challenges in preventing psychosocial risks and addressing mental health in the sector

A common theme emerging from the interviews is that mental health problems are often considered by employers to be private, personal matters falling outside their scope of responsibilities. As a result, for three interviewees, employers' and workers' awareness and acceptance of the impact of workplace psychosocial risks on mental health outcomes is a critical challenge.

“... If people don't see the problem, and that was our experience when starting to approach employers, they said, 'Sorry, we are not responsible for the drinking habits of a person, we are not responsible for his private life and his family problems. If he comes exhausted to the work and so, that is not our problem' ...”

A second theme that emerged was that, despite growing awareness of the importance of looking after one's mental health, seeking workplace assistance remains taboo. In some cases, even seeking help for psychosocial issues is perceived as a threat to workers' privacy and job security.

“... employees may find it daunting to seek assistance, fearing potential repercussions or judgment, as discussions may veer into personal matters. Overcoming this hesitation is akin to addressing personal issues, and doing so in a work environment can be even more daunting due to perceived risks like job insecurity ...”

While mental health awareness is improving, leading to an increase in workplace mental health support initiatives, particularly within larger companies, workers' willingness to seek support from dedicated departments and professionals is still affected by the sector's culture and working conditions. For example, factors such as workplace fragmentation and blurred work–life boundaries not only influence exposure to psychosocial risks but can present challenges to caregiving and help-seeking behaviours in relation to mental health problems.

Addressing mental health at the workplace level is complicated given the bio-psycho-social³ nature of mental health problems and presents additional hurdles for employers. For example, substance misuse issues and family problems were given as cases by interviewees, which employers consider to be workers' personal problems. While these difficulties may influence work performance, employers seem to feel ill-equipped to address concerns with workers, despite the risk of spillover to other areas of work.

³ The bio-psycho-social model in psychiatry, first proposed by proposed by George L. Engel in 1977 is a holistic approach to understanding health and illness. It recognises that biological (e.g. genetics, physical health), psychological (e.g. thoughts, emotions) and social (e.g. social support, cultural context) influence an individual's wellbeing. Social factors can also include scenarios inside and outside of workplaces thus fitting with the social determinants of health.

“... addressing psychosocial risks in the workplace has been a contested issue. Initially, many years ago, [we] advocated for action on psychosocial risks, but encountered resistance from employers who denied responsibility, citing the complexity of distinguishing between personal and work-related factors contributing to such risks ...”

“... If people don't see the problem, and that was our experience when starting to approach employers, they said, 'Sorry, we are not responsible for the drinking habits of a person, we are not responsible for his private life and his family problems. If he comes exhausted to the work and so, that is not our problem' ...”

Linked to this, as one interviewee pointed out, social stigma plays a significant role in addressing mental health in the workplace. The same individual noted that while employers seem more willing to discuss mental illness and respond to mental health concerns, they remain reluctant to address their legal obligations to provide safe working conditions. This suggests a lack of awareness about the spillover effect an individual employee's mental health difficulties can have on their colleagues, teams and organisations.

Finally, the specific obstacles SMEs experience in addressing mental health challenges and managing psychosocial risks were highlighted. Limited human, financial and time resources are barriers to ensuring positive mental health at work. As such, a potential disparity exists between SMEs and larger companies that have better defined occupational health and safety structures, dedicated human resource departments, and designated OSH agencies or contacts.

3.4 Workplace risk assessment and legislation on psychosocial risks

In construction activities, risk assessment is carried out on-site by the client or employer. A general risk assessment in the construction sector should cover all types of risks. However, one participant mentioned that psychosocial risk factors are often not considered, despite indications being available in current guidance. Interviewees suggested that a tendency exists in the sector to focus on physical risks, with psychosocial risks being overlooked. This tendency is associated with the perceived ease of evaluating physical risks compared to psychosocial risks, the first being more tangible and easier to measure. Equally, at a practical level, a feeling of unease when evaluating workplace psychosocial risks appears to be linked with a general lack of knowledge, which impacts the confidence and competence of employers, particularly SME owners, and OSH professionals.

“... we talk about it, but people are not, on a company level, used to dealing with that ... it's not easy to deal with psychosocial risks ... It is easier to deal with risks when it's about safety, because you can measure things, you can touch things, you can see things. But mental health is not easy to measure. It's not easy to touch, to see. You can feel it. You can feel if there is something wrong, but it is not so easy to measure ...”

Somewhat connected to this, some respondents noted that there appears to be a general confusion about when a psychosocial risk factor is a hazard or a risk. For one respondent, this appears to be a common theme in discussions about psychosocial risks within EU directives. Similarly, another interviewee drew attention to the current [EU OSH Framework Directive](#) that contains specific provisions

addressing individual topics, including psychosocial risks (e.g. the working time⁴ and work–life balance⁵ directives). According to this person, awareness of national regulations pertaining to these directives is not well known, and the transposition of these directives into national legislation has led to heterogeneous risk assessment approaches between Member States according to another interviewee, who mentioned that some countries have issued mandatory risk assessment guidelines, while others have taken a less prescriptive approach.

“The EU has an EU directive, which is further delineated into local regulations across different countries. However, these regulations are not universally well-known, with some countries, such as Denmark, Sweden ... adopting mandatory guidelines for risk assessment ... heterogeneous approaches among countries highlight the need for education on these regulations ... underlining the importance of education and awareness-building to bridge the gap between existing practices and the legal mandates.”

The need for political willingness at the European level to tackle mental health in the workplace was commended, yet concern was expressed that this willingness has yet to be reflected at the national and local levels. According to one person, another challenge at the national level concerns implementation of the existing legislation, which is associated with poor awareness of national OSH legislation and policy. Consequently, there is a need to educate employers, managers and supervisors on the obligation to comply with the various EU directives at country level.

“... there has been significant political input at the European level, with initiatives from organisations like EU-OSHA,⁶ the ELA⁷ and the Commission’s Mental Health Strategy.⁸ However, the main challenge lies in enforcement, both at the national and local levels ...”

Finally, another theme was the capacity of some companies to fully implement risk assessments, with company size appearing to be an important determinant of compliance with OSH obligations in the sector.

3.5 Psychosocial risks and mental health management

Psychosocial risks and their impacts on mental health are perceived to be increasing in the sector. The increased attention on mental health was seen as a positive trend by all interviewees, but concerns were also raised that addressing the underlying risk factors is not prioritised. For most participants, mental health continues to be considered an individual problem rather than a workplace issue. Concern was raised that psychosocial workplace hazards and workplace cultures are not adequately addressed as it is easier to target individual signs of mental ill health. For these reasons, the interviewees highlighted that contribution of workplace determinants to mental health outcomes should be prioritised.

⁴ [Directive 2003/88/EC of the European Parliament and of the Council of 4 November 2003](#) concerning certain aspects of the organisation of working time.

⁵ [Directive \(EU\) 2019/1158 of the European Parliament and of the Council of 20 June 2019](#) on work-life balance for parents and carers and repealing Council Directive 2010/18/EU.

⁶ See EU-OSHA (2011). [Mental health promotion in the workplace – A good practice report](#) as an example.

⁷ See the ‘EU 4 fair work campaign’ for example - [EU 4 fair work | European Labour Authority \(europa.eu\)](#)

⁸ European Commission (2023). [Communication: A Comprehensive Approach to Mental Health](#)

“The World Health Organization (WHO) guidelines on mental health at work⁹ underscore the importance of evidence-based workplace interventions ... However, there’s a concern that such initiatives often prioritise identifying signs of mental illness over addressing psychosocial hazards in the work environment. Job strain, low control, high demands, social support, insecurity and bullying are identified as significant contributors to prevalent depression among workers, highlighting the urgency of addressing working conditions.”

Thus, employers’ responsibilities to ensure both physically and psychologically safe work environments were stressed, given their specific and direct contribution to mental health outcomes. As such, addressing psychosocial risks and promoting mental health are contingent on organisational capacity and resources.

However, according to the interviews, some initiatives can be taken directly by employers, depending on resources, demonstrating commitment to protect their workers’ wellbeing. Firstly, it was suggested that at the organisational level, companies can empower and build health and safety professionals’ capacity to address psychosocial risks effectively. To raise awareness of psychosocial risks, comprehensive OSH training incorporating mental health factors should be delivered to all stakeholders. Likewise, standard risk assessments could incorporate psychosocial risk assessments. Building health and safety professionals’ capacity in this area was seen as crucial. Next, holistic, top-down approaches were suggested, where incorporating discussions about company culture and workplace mental health could become regular agenda items in senior management, board and employee meetings. Complementing this, anonymous employee feedback should be regularly sought using standardised questionnaires. Random, anonymous worker surveys can gather valuable insights that can be used to contribute to and improve workplace initiatives. Thirdly, involving workers in job design and redesign using consultation and participatory co-production approaches was recommended, ensuring work tasks align with workers’ skills and qualifications to mitigate psychosocial risks. Finally, regular workload reviews and actively fostering psychologically safe working environments were advised.

As the interviewees underlined, preventing and managing psychosocial risks should be the responsibility of the entire ecosystem. Thus, effective workplace strategies would entail offering individual interventions that acknowledge individual sensitivities to workplace stressors, according to interview participants. A first essential step should be to destigmatise conversations about mental health in the workplace. Steps to eliminate the taboo associated with mental health could include dedicated sessions and workshops on mental health in curriculums, training centres and vocational skills programmes. This, according to one person, would be a first step in building widespread awareness that could additionally contribute to building systems supporting early identification, another suggestion made by one interviewee.

Other suggested prevention efforts could entail awareness raising and specific mental health training sessions (e.g. suicide prevention), the provision of resilience training and mindfulness interventions. Establishing peer support networks to tackle risks associated with a lack of social support and workplace isolation was also mentioned.

Recommended intervention efforts for the workplace-level management of mental health problems included worker referral mechanisms for access to individual-level interventions and deploying resources such as mental health first aiders and ambassadors. Ambassadors’ roles could also contribute to raising company-wide awareness and stimulate the adoption of guidance and provisions on psychosocial risks. The presence of a trade union representative, as suggested by one respondent, may contribute to the success of this endeavour. Considering the temporary and mobile nature of the construction sector, site-specific, tailored interventions were advised. All interventions should be

⁹ World Health Organization (2022). [Guidelines on mental health at work](#)

scientifically evaluated for their effectiveness to reduce uncertainty about their impact, given the current limited evidence base.

Furthermore, it was generally felt that the responsibility of companies for addressing psychosocial issues should be shared with public health bodies, given the complexity of the issue.

Finally, it was advised that strategies and approaches focusing on work-related psychosocial risks and mental health should include and target workers, companies, inspectors, social partners and policymakers. For one participant, a vital element was to reinforce social dialogue at the European and national levels to effectively implement EU directives at the national level.

4 Selected examples of good practices and available guidance

Good practices in the context of psychosocial risks refer to effective initiatives, approaches and principles organisations can adopt to prevent, promote or manage the workplace risks or the associated mental health problems, to improve workers' wellbeing and safety.

They can include either direct actions from employers in terms of pre-existing organisational planning for reducing possible exposure to psychosocial hazards at work or a series of new strategic policies, measures, programmes, projects and other initiatives from public authorities or private entities to support both workers and employers and stimulate better psychosocial environments in the sector. Several key features have been identified that contribute to the effectiveness of good practices: an evidence-based approach (i.e. effectiveness has been demonstrated), proper adaptation to the specific work context, holistic approaches that go beyond individual aspects, participatory methods, clear communication of purpose, and a leadership commitment to promote and model activities.

Previous authors have mapped and classified good practices and their effectiveness for psychosocial risk management and prevention in the construction sector (Greiner et al., 2022; Newaz et al., 2022; Nwaogu et al., 2022). Based on this work and the current research, most interventions can be grouped in one of the following categories:

- *Mental health and/or crisis literacy*: Encompassing all forms of training materials including online and on-site learning activities directed at construction workers at all levels, such as educational courses, workshops or meetings, and promotional materials. These resources can also cover physical health and general wellbeing.
- *Peer and (para-)professional support*: This refers to the provision to workers of listening and discussion spaces developed to safely share mental health complaints and other difficulties in professional and personal life. It can refer to: the creation of specific support groups and peer listening spaces (either in individual or group sessions); the set-up of 'Paraprofessionally-Staffed Crisis Hotlines' (i.e. confidential telephone or online services); supervision and manager training to recognise early signs of mental discomfort; activities of paraprofessionals and volunteer-led interventions (e.g. community programmes, NGOs) to support workers in distress; or direct access to professional counselling services.
- *Stimulation and engagement at the workplace*: Complementary measures to improve day-to-day employee satisfaction, improve organisational culture and reduce the effects of exposure to psychosocial hazards. Examples include further training for fighting mental health stigma and other workplace discrimination; training for improved work communication; staff activities for stimulating camaraderie and team spirit (e.g. social or sporting activities); celebration activities of both team and company successes (e.g. social gatherings, awards, bonuses); and even providing training on new skills required in the sector (e.g. digital technologies).
- *Work redesign*: Including a series of measures to be taken by employers and companies to help them redesign tasks and work management practices within the daily workflow of the business. Some examples include the deployment of job satisfaction surveys, participatory forums for voicing concerns, co-designing organisational changes, offering better work-life balance arrangements (e.g. compressed work weeks for individuals with family or caregiving responsibilities), and the joint planning of work shifts and tasks.

It is worth noting other interventions that may have beneficial effects on the mental health of construction workers, in addition to other more direct effects. A clear example is financial assistance programmes for workers in economic distress, thus tackling stressors connected to financial and job insecurity.

The mapping and analyses of good practices/interventions in the construction sector and their geographical distribution provided by this report suggest that, in general, Scandinavian and Anglo-Saxon countries (e.g. Australia, Canada, United States) (Newaz et al., 2022) have paid greater attention to developing mental health interventions for workers.

Selected examples of good practices in different EU countries are described below, which aim to represent the various categories described above. Additionally, summaries of recommendations published by EU social partners in construction and from an advocacy organisation representing Social Protection Institutions are provided at the end (fiches 9 to 11).

Example 1: **Psiconstrucción - Línea**

Type of initiative	Prevention and management
Countries involved	Spain
Initiator/organisations involved	Fundación Laboral de la Construcción
Level of intervention	Individual

Description

Created in 2004 and relaunched in 2021, this website is managed by the *Fundación Laboral de la Construcción* (Construction Labour Foundation), a Spanish non-for-profit institution that was founded in 1992, dedicated to promoting training, employment, and health and safety in the construction sector. It operates nationwide, covering the entire territory of Spain and manages a network of training centres across the country. Annually, it trains thousands of workers through courses tailored to the construction industry, including vocational training, specialised courses and certifications. The foundation collaborates with various industry stakeholders, including construction companies, trade unions, government agencies and educational institutions.

Among the resources available on this website, there is a **'self-diagnostic' questionnaire**, which aims to provide site managers with a tool to enable them to identify psychosocial risk factors that are present during task execution:

- The questionnaire consists of 20 questions divided into organisational factors and personal factors. Upon completing the questionnaire, an individualised training and a personalised plan or route of recommended resources and actions will be generated (including videos, factsheets and guides).
- These resources are available on the website and will help the user begin working on preventing their psychosocial risks. The resources and recommendations aim to help workers manage stress, handle conflicts at work, improve their relationships with fellow workers and develop strategies to ensure that work issues do not impact their personal lives.
- While initially targeting middle managers and foremen in the construction sector, both the questionnaire and the contained documentation can prove beneficial for companies, prevention technicians or other workers seeking an understanding and additional information on the prevention and management of psychosocial factors and risks within the construction sector.

This project operates within the framework of the 2017 sectoral actions call, financed by the State Foundation for the Prevention of Occupational Risks (FSP), with the *Fundación Laboral de la Construcción* serving as the project's beneficiary: 'Tool for the self-diagnosis of psychosocial risks for middle managers in construction (ES 2017-0030)'.

Recent data highlighting the initiative's reach and effectiveness:

1. **Longevity and reach:** Línea Prevención has been operational for 20 years and has received over a million web visits since 2004. In 2023 alone, it received close to 200,000 visits.
2. **Volume of inquiries:** Over the past two decades, the service has handled close to 100,000 inquiries, both via phone and email, all resolved by specialised technicians in occupational risk prevention from the *Fundación Laboral de la Construcción*. In 2023, more than 11,000 consultations on prevention were carried out.

3. **Types of inquiries:** The inquiries spanned a wide range of topics crucial for ensuring the health and wellbeing of workers. These included technical issues related to collective protection measures, safety equipment, machinery safety, innovative technical solutions, and compliance with health and safety regulations and norms at construction sites.

References and resources

- URL: [Riesgos Psicosociales en el sector de la construcción \(lineaprevencion.com\)](https://lineaprevencion.com)
- Newsletter available at: [El servicio de asesoramiento Línea Prevención cumple 20 años de fu \(lineaprevencion.com\)](https://lineaprevencion.com)
- Self-diagnostic questionnaire: [Autodiagnóstico online para prevenir tus riesgos psicosociales \(lineaprevencion.com\)](https://lineaprevencion.com)

Example 2: **Building your mental resilience**

Type of initiative	Prevention
Countries involved	Belgium
Initiator/organisations involved	Constructiv
Level of intervention	Organisational

Description

Constructiv operates as a non-profit organisation, specifically established as a social security fund by the social partners in the construction industry to address the sector's needs.

The federal action plan 'Mental Well-being at Work' is a comprehensive strategy developed by Belgium federal authorities to address the mental health challenges faced by workers in various sectors. The council of ministers approved 11 sustainable projects that aimed to meet demand at sectoral and collective levels, and which were subsequently implemented at company level, focusing on the specific psychosocial risks of different sectors:

Building your Mental Resilience by Constructiv is one of the 11 selected projects. Initiated in 2022, it focuses on interventions to enhance the wellbeing of the construction workforce, by developing materials that target both employers and workers, primarily aiming to raise awareness about mental health. The initiative uses a mixture of individual and collective approaches.

The primary objective of this programme is to raise awareness and stimulate discussions about psychosocial challenges within the construction sector. To achieve this goal, Constructiv has developed **toolkits** that aim to proactively address psychosocial risks, which consist of an informative brochure along with an introductory video explaining the process of conducting a risk analysis. Grounded in the *five As approach* (awareness, assessment, action, assistance and analysis) to address psychosocial risks in the workplace, these resources are designed to equip companies with the necessary tools to effectively manage these risks and bring explicit attention to the issue. The toolkits include an appendix outlining the legal framework related to psychosocial risks and their primary prevention, providing additional guidance and support to organisations navigating this critical aspect of workplace wellbeing.

During the development of the toolkits, a participatory risk analysis was conducted by Constructiv at 11 pilot companies, in collaboration with Liantis, an insurance company experienced in online questionnaire usage, to assess workability across sectors. Some companies tested the initial five toolkits and found that they were insufficient to meet their needs, particularly in wellbeing or workability¹⁰ policy development and in discussing psychosocial risks. Consequently, the focus shifted to two toolkits: one on policy development and one on conversation techniques.

Post-project, the toolkits remain accessible on Constructiv's 'Building Your Learning' website, which already offers various wellbeing training courses. Additionally, sector partners will promote them through their channels, and they will be incorporated into union partner training days. Despite the lower number (i.e. two instead of five), progress was made in the field of conversation techniques, which can have a positive effect on mental health in the longer term within the construction sector.

The initiative was evaluated through various methods including feedback surveys, follow-up interviews with participants and performance assessments to gauge the effectiveness of the training provided. The evaluation showed that the project successfully met its primary goals, which included improving the participants' ability to handle workplace stress and enhancing their overall mental

¹⁰ Workability in this context refers to the capability of individuals to effectively engage in work activities while maintaining their physical and mental health.

resilience. Feedback from participants was generally positive, indicating that they found the resources valuable in building their mental resilience. However, a challenge identified was reaching all companies in the country and ensuring that the message about psychosocial wellbeing was consciously received and acknowledged.

Constructiv has additional resources targeting mental health and wellbeing, namely:

- **A dossier on psychosocial risks** to help mainly small construction companies to detect and deal with psychosocial risks inside their organisation. The dossier is a simple, practical and non-prescriptive tool for finding quick answers to specific questions. The objective of this dossier is essentially to help those concerned meet the legislation in force in Belgium.
- **A brochure for employers:** this dossier addresses stress prevention in the construction sector, defining workload and stress, the importance of developing a prevention policy, and the identification of stress factors and signs of overwork. A step-by-step plan is provided on how to address the issue of stress systematically in the company. It also lists a series of problems commonly encountered in the construction industry and possible solutions.
- **A brochure for workers:** this dossier starts off by defining workload and stress. It then discusses risk factors for work-related stress and how to recognise the symptoms of stress yourself. It ends by setting out what employers are required to do and what action workers can take themselves.
- **A dossier on prevention in relation to alcohol and drugs in the construction industry:** this dossier is a user-friendly tool to help with the implementation of a preventive policy. It sets out the issue of alcohol and drugs and features two templates for policy statements and declarations of intent.
- **A dossier on roadworks – psychosocial stress at work and the health factor:** after a section focusing on the legislation, this dossier addresses health risks and psychosocial stress. It then features profession-specific prevention information cards (road worker, sewer installer, paver, etc.) and thematic prevention cards (signage, trench shielding, pneumatic drill, etc.).
- **Website resources** that cover a range of topics, including psychosocial risks, stress prevention, alcohol and drug prevention, and psychosocial stress in roadwork. Designed to be user-friendly and practical, these materials offer valuable guidance and solutions for detecting, managing and preventing mental health issues within construction organisations.

References and resources

- URL: [Constructiv - Welzijn](#)
- Evaluation report on sectoral projects for the prevention of psychosocial risks at work (2023): [Evaluatierapport betreffende de sectorprojecten ter preventie van psychosociale risico's op het werk - finaal.pdf \(belgie.be\)](#)
- Sectoral projects "Prevention of psychosocial risks at work" (FPS Employment – Belgium – 2022/2023): [Psychosociale risico's \(PSR\) - Goede praktijken | Beswic](#)
- Building your learning resources: [Building Your Learning | Well-being advice for the construction industry - Constructiv dossier 118 \(In English + other languages\)](#)

Example 3: **Construction industry helpline, app and building mental health training programme**

Type of initiative	Prevention & intervention
Countries involved	Ireland and UK
Initiator/organisations involved	Lighthouse construction industry charity
Level of intervention	Individual

Description

Established in 2003, the Lighthouse Construction Industry Charity offers support to the construction community across Ireland and the UK, assisting workers and their families facing work-related financial hardship or emotional challenges. The initiative uses a combination of individual and collective approaches.

Some key initiatives undertaken by this organisation include:

- **Construction industry helpline and app**, designed to provide assistance and promote mental health within the construction sector. It offers a confidential 24/7 support service for construction workers in Ireland and the UK. Staffed by trained professionals, the helpline covers various issues free of charge, including financial concerns, legal advice, debt management and mental health support. Additionally, the construction industry helpline app serves as a mobile resource, allowing construction workers to access helpline services directly from their phones and providing information on mental health, wellbeing and guidance on various issues affecting construction workers.
- **Training of mental health aid instructors and first aiders** in the sector: in 2018, a group of leaders and experts from the construction industry came together to launch 'Building Mental Health'. They were inspired by the 'Thriving at Work' report, released by the UK government the year before, which highlighted ways for employers to better support their s. The training aimed to deliver tailored construction-focused instructor courses with the goal of training 288 mental health first aid instructors and subsequently educating 3,000 mental health aid instructors within the sector. The instructors course spans seven days delivered over six weeks to allow for reflection on complex issues. The first aiders course is delivered by the mental health first aid instructors and aims to train people within the company to be a point of contact for employees experiencing emotional distress or showing signs of a mental health issue, or simply looking for more information. This initiative seeks to foster sector engagement with mental health initiatives, raise awareness of mental health issues, provide readily available best practices and information, and reduce the stigma surrounding mental health by initiating conversations and providing support to workers on where and when to seek help. Its uniqueness relates to the fact that employers usually have an appointed physical first aider (trained individuals whose primary role is to stabilise the injured person until professional medical help can be arranged or arrives); this programme promotes and develops mental health first aiders, who are just as essential.

In 2023, the Lighthouse Construction Industry Charity experienced impacts and growth. The key figures include:

- **Increased demand for support:** the charity saw a 30% increase in individuals reaching out for support through its construction industry helpline, with 4,438 people seeking assistance.

- **Frontline interventions:** initiatives like the MakeltVisible on-site programme had a significant impact, engaging with over 25,000 site workers and providing support to 147 workers experiencing suicidal thoughts.
- **Online resources:** the [MakeltVisible](#) wellbeing portal was launched, providing a comprehensive resource for emotional, physical and financial wellbeing support through authentic video case studies and guidance.
- **Innovative support services:** the introduction of a live online chat service and real-time translation services expanded support accessibility.
- **Support for mental health first aiders:** the Well-being Champion Support programme provided professional support to over 12,000 mental health first aiders in the industry.
- **Critical response service:** the charity's critical response service provided support at 50 locations for those affected by serious or fatal on-site incidents.
- **Well-being Academy:** the Well-being Academy courses were attended by 341 workers.

References and resources

- URL: [Lighthouse Club - The Construction Industry Charity](#)
- Newsletter: [Shining a Light in 2023; A Year of Resilience and Growth - Lighthouse Construction Industry Charity \(lighthouseclub.org\)](#)
- Thriving at Work: the Stevenson / Farmer review on mental health and employers: [Thriving at Work: the Stevenson / Farmer review on mental health and employers \(publishing.service.gov.uk\)](#)

Example 4: **Prevent**

Type of initiative	Prevention and management
Countries involved	Sweden
Initiator/organisations involved	Prevent
Level of intervention	Organisational

Description

Prevent is a non-profit organisation jointly owned by the Confederation of Swedish Enterprises, the Swedish Trade Union Confederation (LO) and the Swedish Confederation of Trade Unions (PTK). Prevent ensures that all initiatives are collaboratively developed by trade unions and employers, and the initiatives undertaken commonly use a mix of individual and collective approaches.

Prevent offers valuable knowledge and resources aimed at improving the work environment within the construction sector by providing information, education and practical tools that can support companies in the sector. Among the resources offered are checklists for assessing psychological risk factors and measures to mitigate work environment risks. Additionally, Prevent published a comprehensive guide, *Coordination Responsibility in Construction and Civil Engineering*, which clarifies the roles of coordinators and building work environment coordinators, highlighting their complementary functions.

A specific area of focus within Prevent is the organisational and social work environment in the construction sector. Here, both managers and workers in construction can access a range of resources to address various issues such as workload management, stress, leadership, working hours, conflicts and bullying. These resources provide insights into what constitutes a healthy organisational and social work environment.

Key services provided by Prevent in this context include:

- **OSA survey:** an anonymous survey focused on assessing the organisational and social work environment, covering aspects such as workload, recovery, victimisation and leadership. The survey results should guide the development of collaborative measures to address identified areas for improvement.
- **OSA checklist:** this tool assists organisations in evaluating their compliance with regulations concerning the organisational and social work environment, including workload management, organisation of working hours and prevention of victimisation. Additional checklists address specific issues such as crisis management, threats and violence, and sexual harassment.
- **Training on organisational and social work environment:** Prevent offers training sessions to familiarise companies with regulations governing the organisational and social work environment. These sessions provide practical guidance on effectively managing work environment issues such as collaboration in workplace safety, risk identification and prevention, and fostering a supportive and constructive work culture. This aims to enhance overall workplace wellbeing and productivity.
- **Informational brochures:** Prevent provides informational brochures and guides to help employers and workers navigate various aspects of OSH, including issues related to pregnancy, breastfeeding and the physical work environment.

References and resources

- URL: [Prevent - work environment in collaboration](#)
- URL: [Occupational safety and health in the construction industry \(prevent.se\)](#)

Example 5: **Wellbeing strategy**

Type of initiative	Prevention and mitigation
Countries involved	Austria
Initiator/organisations involved	PORR group
Level of intervention	Individual & organisational

Description

PORR Group is a leading publicly traded construction company, one of the largest in Austria. It operates internationally with over 19,000 employees in over 50 countries in the EU and Asia. PORR Group undertakes a wide range of projects, from large-scale infrastructure developments, such as bridges, highways and railways, to complex building constructions, such as commercial complexes, residential towers and industrial facilities. It operates across various sectors of construction, including infrastructure, transportation, civil engineering, building construction and environmental projects.

The company's approach to promote workers' wellbeing involves actively listening to the concerns of on-site colleagues and collaboratively finding effective solutions to create a work environment that improves the situation of workers on-site. The primary objective of this strategy is to enhance the mental health and wellbeing of workers by addressing both individual and organisational factors.

Some of the initiatives undertaken include:

- **Conducting annual workshops** to gain direct insights into the challenges faced by its workforce, particularly blue-collar construction workers on-site, that could affect their mental health and wellbeing. As a result, one notable improvement stemmed from feedback regarding uncomfortable PPE. In response, the company undertook a comprehensive review involving 140 participants from various EU countries, leading to the acquisition of PPE better suited for different temperatures and work conditions in all branches. Additionally, the company experimented with lighter clothing options, prioritising worker comfort and acceptance. Technological interventions, such as shaded areas and organised hydration, were also tested to enhance worker wellbeing. Another notable outcome of this collaborative process resulted in the streamlining of paperwork. Workers expressed concerns about burdensome internal paperwork, prompting the company to overhaul its documentation processes. The focus shifted towards reducing redundancy, ensuring tasks are not duplicated and simplifying the overall paperwork structure.
- **Implementation of a proactive individual approach to handling mental health** issues, with a dedicated in-house professional available for workers to reach out to. This service extends beyond normal working hours and covers a broad spectrum of challenges, including personal and work-related issues. The aim is to prevent long-term trauma and provide a safe space for workers to express their emotions and concerns. This support extends beyond addressing accidents or traumas, including discussions on various personal issues such as problems with colleagues, family-related concerns and illnesses of family members. This expert offers solutions and guidance to workers facing challenges in their personal lives.
- **Financial and organisational support** to workers facing challenges that can affect their psychological wellbeing, such as medical expenses or personal emergencies, or implementing flexible working arrangements, for example, a combination of on-site and home office work. This flexibility is particularly beneficial for workers with childcare responsibilities, especially when external factors like kindergarten closures arise.

- **Integration of a diverse workforce** with initiatives such as cultural awareness programmes, meals catering to different cultures and efforts to foster collaboration among diverse groups of workers.

While no formal evaluation has yet been conducted, the initiatives implemented by PORR Group resulted in some tangible improvements in working conditions: streamlined paperwork processes, improved PPE use and provision of proactive mental health support. Indeed, they have been awarded the Workplace Health Promotion seal by the Austrian Health Insurance Fund (ÖGK). This recognition is given to companies that implement comprehensive measures to enhance the health and wellbeing of their workers. Caution is advised as cultural differences and varying individual needs may pose challenges in implementing such interventions universally across the diverse workforces in the sector.

References and resources

- URL: [Get to know the PORR Group - PORR AG \(porr-group.com\)](https://www.porr-group.com)
- Annual and Sustainability Report (2022): [PORR_Gescha_ftsbericht_2022_en_sec.pdf \(porr-group.com\)](#)
- Press release - PORR gets Workplace Health Promotion seal: [PORR gets Workplace Health Promotion seal](#)

Example 6: **Collective agreement for the painting profession**

Type of initiative	Protection
Countries involved	Sweden
Initiator/organisations involved	Målareförbundet
Level of intervention	Structural & organisational
Description	

Målareförbundet is the Swedish painters' union, which represents an important collective of workers in the construction sector. A collective agreement for the painting profession was negotiated by Målareförbundet for the 2023-2025 period that encompasses several key provisions aimed at addressing challenges identified by these workers, including specific problems faced by women working in construction (e.g. gender-based discrimination, harassment, underrepresentation in leadership positions, physical strain from equipment designed for male workers, and challenges in balancing work and family responsibilities).

The agreement came into force in May 2023 after being signed by the Swedish Painters' Association, the Swedish Motor Industry Employers' Association and Fastigo (an employers' organisation in Sweden that represents companies operating in the real estate sector).

Key provisions in this agreement and its subsequent negotiations include:

- **Increasing the duration of basic training for appointed safety representatives** from 24-32 hours to a minimum of 28 hours with an additional four hours dedicated to preventing sexual harassment.
- The provision of **separate changing rooms** for male and female workers, with employers responsible for providing appropriate meal and dressing facilities equipped with necessary hygiene items.
- Establishing a **40-hour working week**, prohibiting part-time or alternative forms of employment. Union officials consider this provision as crucial as their members are not interested in working part time and consequently giving up the benefits that full-time work generates.
- **Introduction of pregnancy pay** to address the challenges faced by pregnant workers in the painting profession. If working conditions cannot be adapted for safety during pregnancy, the employer is required to pay 10% of the pregnant worker's salary during leave, complementing the national social welfare system's coverage of up to 80%. This measure reduces income loss from 20% to 10%. Furthermore, job dismissal due to lack of work is prohibited during the last two months of pregnancy, and the union covers the costs of pregnancy insurance for pregnant members and their unborn babies. The collective agreement extends its positive impact to parental leave, ensuring that if a worker on parental leave is dismissed, the notice period only begins upon the parent's return to work after the leave, providing security and tranquillity during this period.

The union reports an increasing interest among women in joining the painting sector later in life, often transitioning from traditional female-dominated occupations like healthcare. These women cite the sector's favourable terms of employment, including stable full-time positions, standard working hours aligning with childcare availability, and a robust social welfare system ensuring full payment, predictable working hours, gender-equal income and improved pensions later in life.

References and resources

- MIRA's film about discrimination and harassment: [MIRA's film about discrimination and harassment - The Swedish Painters' Union \(malarna.nu\)](https://www.malarna.nu/en/2023/03/mira-film-about-discrimination-and-harassment)
- MIRA – Network for Women Painters and Refinishers: [MIRA – Nätverk för kvinnliga målare och lackerare - Målarnas förbund \(malarna.nu\)](https://www.malarna.nu/en/2023/03/mira-network-for-women-painters-and-refinishers)
- Collective agreement for the monthly salary agreement Fastigo 2023-2025: [kollektivavtal-fastigo-2023-2025.pdf \(malarna.nu\)](https://www.malarna.nu/en/2023/03/kollektivavtal-fastigo-2023-2025)

Example 7: The ‘Mental Health Promotion and Intervention in Occupational Settings’ (MENTUPP) Project

Type of initiative	Prevention
Countries involved	Sweden, Austria, Germany, Spain, Belgium, Portugal, Greece, Italy and Australia
Initiator/organisations involved	MENTUPP (Public Sector, EU-funded project)
Level of intervention	Individual

Description

The four-year MENTUPP project, funded by the EU Horizon 2020 scheme, began in January 2020. Its primary objective is to enhance mental wellbeing in the workplace by crafting, executing and assessing a multilevel intervention tailored to address mental health challenges within SMEs operating in the construction, health, and information and communication technologies sectors. Additionally, the project aims to mitigate depression and reduce suicidal behaviour.

The MENTUPP complex intervention approach is facilitated through the MENTUPP Hub online platform, allowing both managers and employees to access resources to promote peer support and enhance individual and organisational wellbeing. Participants must create a profile to access the hub’s interactive psychoeducational materials toolkits and links to additional resources. These intervention materials have been refined based on feedback from a pilot study. This process was driven by a series of systematic reviews focusing on the deployment of mental health promotion interventions in workplace settings and psychosocial interventions targeting depression, anxiety, and suicidal thoughts and behaviours. Further inputs that informed these revisions included recommendations from local research officers and feedback from focus groups conducted during the pilot phase. Moreover, contributions from local steering groups, which include representatives from each sector involved, were considered. The primary updates to the online materials integrated these diverse inputs to create a more engaging, coherent and user-friendly interface, featuring straightforward language and improved navigation and structure.

Users are guided through a progress journey aimed at improving both non-clinical aspects, such as job stress, wellbeing and burnout, and clinical aspects of mental health, including depression and anxiety symptoms and disorders, all while learning how to communicate with each other about mental health difficulties. All materials are available in the national languages spoken in the intervention countries.

The 2023 evaluation of the project highlighted several facilitating factors for successful implementation of the intervention, which included the diversity of available materials, assistance from research officers and the presence of a well-structured implementation plan. Several barriers were also noted: the challenge of holding open discussions about mental health; the need for familiarity with technology; difficulties in integrating the intervention into daily routines; and constraints imposed by the COVID-19 pandemic.

References and resources

- URL: [MENTUPP hub - MENTUPP | Mental Health Promotion in Occupational Settings \(www.mentuppproject.eu\)](https://www.mentuppproject.eu)
- Mental health promotion & intervention in occupational settings: MENTUPP: Internal-Leaflet-for-SMEs.pdf (mentuppproject.eu)

- Tsantila, F. et al. (2023). Implementing a complex mental health intervention in occupational settings: Process evaluation of the MENTUPP pilot study. *BMJ Open*, 13(12), e077093. <https://doi.org/10.1136/bmjopen-2023-077093>

Example 8: **Construction Safety Training Package (CSTP)**

Type of initiative	Prevention
Countries involved	Italy, Spain and the UK
Initiator/organisations involved	University of Trento, University of Bologna, ESIC Business & Marketing School, University of Valencia and The University of Sheffield
Level of intervention	Organisational

Description

This publicly funded initiative was developed by an EU-joint consortia involving educational centres in Italy, Spain and the UK. The Construction Safety Training Package (CSTP) is a theory-based¹¹ training programme aimed at improving safety behaviours on construction sites. The training programme addresses psychosocial risks encountered by migrant workers in the construction industry, including language barriers, cultural differences, time pressures, difficult living conditions, and segregation between native and migrant workers, all of which may have a detrimental impact on mental health and wellbeing.

The CSTP is designed for groups of around 15-20 members, composed of both migrant and native workers. It places strong emphasis on fostering shared language and interaction to promote effective safety practices. One of the main challenges of this type of training lies in translating materials for diverse migrant groups, highlighting the importance of cultural inclusivity to ensure a common understanding of safety issues.

Learning principles guiding the training package design include:

- incorporation of non-technical skills, such as communication, teamwork, decision-making, situational awareness, and stress and fatigue management;
- contextualisation of training activities with on-site work; and
- participatory and interactive approach.

The uniqueness of this approach lies in the use of interactive games to overcome language barriers and enhance the learning process. The in-class units are designed to last 20 hours, allowing trainees to practice learned knowledge and skills. E-learning activities, spanning about four hours, serve as a platform for reinforcing knowledge gained in class, providing additional references and hosting learning games for continuous feedback.

The training concludes with an exam, and successful participants receive a certificate, whose legal validity depends on country regulations. Overall, the training package seeks to go beyond technical skills, addressing the cognitive and affective aspects of safety through interactive and engaging instructional methods.

The training was evaluated for its effectiveness in a separate study. It employed a theoretical approach known as realist evaluation, which allowed for an exploration of what factors worked for whom and under what circumstances. It consisted of a two-phase evaluation approach in the construction industry in Spain and Italy, with initial surveys administered immediately after the training and follow-up surveys six months later. All 107 workers who completed the training also filled out the

¹¹ In this context, 'theory-based' refers to the fact that the CSTP is grounded in established theories or principles related to occupational safety and health, particularly based on second- and third-generational models of training. This means that the training programme is not just based on practical experience or ad hoc methods, but rather it is designed using theories that explain how certain factors influence safety behaviours and outcomes on construction sites.

survey. Six months after the training, 57 workers responded to the follow-up survey, yielding a response rate of 47.90%. The main findings were:

- Training in non-technical skills can be effective in transferring skills to the work site, leading to sustainable effects and improving safety performance for both native and migrant workers.
- Efficacy beliefs¹² predict behaviour. This means that, if workers believe in their abilities, non-technical skills are more likely to enhance their training experience, making it more effective. Hence, it is recommended that trainers and supervisors focus on promoting efficacy beliefs, particularly among migrant workers who may have lower safety-related, self-efficacy beliefs (i.e. lower confidence in their ability to adhere to safety protocols, recognise and mitigate risks, and effectively respond to hazards in the workplace).
- Trained workers returning to construction sites should be encouraged to apply their learned skills. This encouragement could involve various methods, such as toolbox talks where trained and non-trained workers discuss safety issues, with trained workers sharing their skills.
- Supervisors play a crucial role in supporting training transfer by discussing learning with workers and allocating tasks that allow workers to apply their skills.

The evaluation findings suggest that workers who report improved communication and non-technical skills following the training, coupled with strong safety self-efficacy beliefs, are more likely to apply these gained skills in real-world, professional settings.

References and resources

- Vignoli, M., Nielsen, K., Guglielmi, D., Mariani, M. G., Patras, L., & Peiró, J. M. (2021). Design of a safety training package for migrant workers in the construction industry. *Safety Science*, 136, 105124. <https://doi.org/10.1016/j.ssci.2020.105124>
- Nielsen, K., Ng, K., Guglielmi, D., Lorente, L., Pătraș, L., & Vignoli, M. (2022). The importance of training transfer of non-technical skills safety training of construction workers. *International Journal of Occupational Safety and Ergonomics*, 29(1), 444-452. <https://doi.org/10.1080/10803548.2022.2052624>

¹² Self-efficacy beliefs refer to an individual's confidence in their ability to successfully perform a specific task or achieve a desired outcome. In the context of safety training in the construction industry, safety self-efficacy beliefs would involve a worker's confidence in their ability to adhere to safety protocols, recognise and mitigate risks, and effectively respond to hazards in the workplace.

Example 9: **Psychosocial risks in construction: a good practice guide to assessing and reducing psychosocial risks**

Type of initiative	Prevention & intervention
Countries involved	EU level
Initiator/organisations involved	EFBWW (European Federation of Building and Woodworkers) and FIEC (European Construction Industry Federation)
Level of intervention	Organisational

Description

The European social partners in the construction industry, EFBWW (workers) and FIEC (industry), directed their efforts exclusively towards raising awareness of work-related factors that may contribute to psychosocial risks in the construction sector in the EU.

Published in 2019, the guide provides stakeholders and safety representatives with specific information to support their prevention efforts tailored to the unique needs and characteristics of the construction industry, including guidance on how to identify and assess the risks in a participatory process. The guide provides specific recommendations on how to reduce stress in various aspects of work.

Key recommendations to improve mental health and wellbeing include:

- If workers feel overburdened by their work, review and change the content and design of work, implement mentoring programmes or in-group trainings, and organise performance appraisals to acknowledge skill-building.
- To address concerns about work pressure, consider incorporating a time buffer into schedules.
- When working hours disrupt work–life balance, involve workers in roster planning and inquire about their preferences for working hours.
- For issues related to the organisation of working time or hours, provide timely feedback on all aspects of scheduling, consider workers’ health when scheduling breaks, and announce changes in manpower planning, such as location changes, well in advance.
- To combat isolation during solitary work shifts, organise cross-departmental projects or job rotations with colleagues.
- To address the lack of positive feedback from managers and appraisal processes, establish a system for sharing positive feedback from customers and hold debriefings after projects to discuss accomplishments and lessons learned.
- For foreign workers who may feel isolated due to communication barriers, ensure all workers receive the same level of information, involve them in relevant measures, and explicitly consult them to improve communication and cooperation.
- To mitigate unclear communication structures and repeated disruptions due to misinformation, clarify roles and responsibilities, improve transparency in information and communication within the company, reflect on leadership behaviours, and introduce regular feedback mechanisms for working situations and improvement opportunities.
- Address language barriers among workers from diverse backgrounds by providing information in multiple languages, assessing language skills among workers and offering language training if feasible.

- In cases of workplace conflicts, provide support mechanisms, offer health and safety training, and implement conflict resolution measures, potentially through external resources.

References and resources

- European Federation of Building and Woodworkers (EFBWW) & European Construction Industry Federation (FIEC) (2019). *Psychosocial risks in construction: A good practice guide to assessing and reducing psychosocial risks*. <https://www.efbww.eu/publications/press-releases/psychosocial-risks-in-construction/227-a>

Example 10: **Women in construction, wood and forestry – A resource toolkit for gender equality at work**

Type of initiative	Prevention
Countries involved	EU level
Initiator/organisations involved	European Federation of Building and Woodworkers (EFBWW) (Not-for-Profit Sector)
Level of intervention	Organisational & structural

Description

This initiative on women’s mental health in the construction, wood and forestry industries aims to identify the primary challenges faced by women in these sectors and to showcase successful practices for overcoming these obstacles.

The project consisted of six phases:

1. Gathering statistical data and literature reviews on women’s presence in these industries, including Eurostat statistics and literature from Europe and beyond.
2. Analysing questionnaire responses from the EFBWW survey conducted in 2020-2021. The survey questionnaire was distributed to all 77 EFBWW national affiliates across 36 countries, resulting in 25 responses from 19 trade unions.
3. Identifying good practices related to gender issues, especially in collective bargaining and agreements, through interviews and contacts with EFBWW women’s network members and respondents.
4. Developing a practical manual tailored to industry practitioners, incorporating tools and resources to increase women’s participation, drawing from research and existing manuals worldwide.
5. Identifying gender policy priorities, particularly in European Sectoral Social Dialogue, based on research and discussions with construction social partners.
6. Disseminating the toolkit and engaging in discussions with external stakeholders, including employers, during the EFBWW General Assembly.

With a particular focus on working conditions and a gendered approach to OSH, the toolkit emphasises work-specific stress factors specific to women and proposes various actions to address these issues, such as improving collective bargaining agreements beyond statutory minimum requirements in terms of OSH, addressing workplace harassment through clear definitions and zero-tolerance policies, and ensuring OSH training includes gender aspects, such as harassment (including sexual) in the workplace.

Key recommendations to address some identified stress factors include:

- Collective bargaining agreements should comprehensively address workplace harassment, including defining various forms of harassment, committing to a zero-tolerance policy, outlining responsibilities, establishing complaint mechanisms with investigation procedures and designated contacts, safeguarding whistleblowers, victims and witnesses, and specifying sanctions.
- Adequate support should be provided to employees facing harassment, especially during the lodging of complaints.

- Women should be actively included in OSH committees in both unions and workplaces, with their participation ensured in relevant training sessions, recognising that women are disproportionately affected by harassment and violence in the sector.
- Whenever feasible, female construction professionals should work alongside at least one other female colleague to mitigate isolation and potential discrimination.
- Maternity leave policies, including extended paid leave periods and enhanced pay rates, should be established, along with protections against dismissal during and after maternity leave, exceeding statutory minimum requirements. Pregnant and breastfeeding workers should be granted the right for more job flexibility, such as job changes and job breaks
- Menstrual leave and period dignity considerations (like additional rest periods during menstruation) should be available.
- Ensure that women have access to separate changing rooms and welfare facilities.
- Regular monitoring of working hours to ensure wellbeing and the effectiveness of employment policies.
- Implement core working hours to facilitate availability for meetings while maintaining flexibility.
- Provide childcare facilities near the workplace.
- Opportunities for part-time and flexible working arrangements, avoiding the reward or promotion of excessive working hours, and monitoring fatigue.
- Establish clear policies for home-based working for all employees.
- Introduce a 'gender audit template' to identify earlier problematic departments and areas within the organisation, and supporting data collection, analysis and evaluation to promote equality and prevention measures effectively.
- Monitor progress regularly, including the use of fixed-term contracts, flexible working arrangements and gender balance within teams.
- Allocate a dedicated budget (including human resources) to support enforcement efforts.

References and resources

- Women in Construction, Wood and Forestry - A Resource Toolkit for Gender Equality at Work (2023): <https://www.efbww.eu/publications/reports-and-studies/womens-in-construction-wood-and-forestry-tollkit/3298-a>

Example 11: **Youth Employment Skillset in Posting (YES Project) - EU Toolkit**

Type of initiative	Prevention
Countries involved	Italy, Germany, Spain, Portugal, Poland and Albania
Initiator/organisations involved	European Association of Paritarian Institutions
Level of intervention	Individual & structural

Description

The YES project was launched in 2020 by the European Association of Paritarian Institutions, an advocacy organisation representing social protection institutions. It is jointly managed by employers and trade unions in Europe.

The primary objective of the YES project is to engage key stakeholders in gaining more understanding of the challenges and opportunities associated with posting EU workers (i.e. temporarily transferring employees to another country to carry out work on behalf of their employer) within the construction sector, particularly focusing on skills and skill recognition, helping to manage and reduce the stress that comes with being a migrant worker. The project's activities are centred on identifying solutions to eliminate obstacles hindering fair labour mobility, while actively contributing to a decent work agenda in Europe.

In addition to addressing posting challenges and opportunities, the project aims to mitigate psychological risk factors faced by posted workers. These factors include cultural and language barriers, uncertainty and lack of general support, which often lead to stress and isolation among posted workers. This project acknowledges that such challenges can lead to difficulties in communication, understanding workplace norms (including safety rules) and forming social connections, contributing to feelings of alienation and disconnection.

The outcomes of the project include a set of EU-wide recommendations, presented in an online toolkit available for the public. These recommendations are further detailed in country-specific sections contributed by each national partner, to ensure relevance and applicability across diverse national contexts.

Key recommendations to address these work-related stress factors include:

- **Make information targeting sending undertakings¹³ and posted workers easy to access:**
 - create and distribute practical guides,
 - conduct leafleting campaigns at construction sites,
 - publish short explanatory videos, and
 - establish a dedicated phone line.
- **Develop an onboarding process for posted workers:**
 - Assign a reference person for posted workers at the host location, potentially in public employment centres, migrant worker offices or within the European Employment Services (EURES) network.¹⁴

¹³ Sending undertakings refers to companies or entities sending workers to other countries for work purposes.

¹⁴ EURES facilitates the free movement of workers by providing information and employment support services to both workers and employers. It also enhances cooperation and facilitates information exchange among its member organisations.

- Undertakings should offer short courses before posting that educate workers on their rights, income taxation, and practical aspects such as accommodation and travel arrangements.
- **Make sure posted workers (and their employers) are aware of OSH rules:**
 - Develop and distribute guides in both print and electronic formats to inform posted workers and their employers about OSH regulations.
 - Improve accessibility of existing guides, especially in SMEs. A starting point could be the use of the national website on posting as a single-entry point to promote material developed by other institutions/stakeholders.
 - Ensure that host-country public institutions inform sending undertakings of the penalties for neglecting to train posted workers in OSH according to national laws.
- **Make sure workers have proper training in the field of OSH:**
 - Promote and adopt internationally recognised health and safety courses for construction sites to ensure proper training of posted workers.
 - Implement pilot programmes like the VCA (Safety, Health and Environment Checklist Contractors in English)¹⁵ in cross-border regions or between countries with significant posted worker flows to ensure high-quality training and official accreditation.
 - Maintain vigilance against the risks associated with hosting inadequately prepared workers for specific tasks. While posted workers must receive mandatory OSH training in the host country, host companies should provide additional job-specific training, considering factors like language barriers and cultural differences. Employers' organisations, trade unions and labour inspectorates should offer support and guidance to enhance safety measures.

References and resources

- URL: [Results & Project Deliverables - YES Project](#)
- EU Toolkit: [YES-Project-EU-Toolkit.pdf \(yesproject.net\)](#)

¹⁵ The VCA is a certification aimed at promoting safety, health and environmental awareness in the construction and contracting industries in Belgium and the Netherlands. It demonstrates that a company or individual has met certain safety standards and is competent to carry out work safely.

5 Conclusions

The objective of this report is to examine work-related psychosocial risk factors and their impact on mental health outcomes in the construction sector. Thus, this report presents the current knowledge on the main psychosocial risks in the sector.

This study has investigated the impact and implications of psychosocial risk exposure on construction workers' psychological wellbeing. The study reports on the relationships that have been shown in the literature between work-related psychosocial risks, some of which are unique to the construction industry, and mental health problems. It examines the degree of interplay between a range of different psychosocial risks, mental health and organisational outcomes. Also, the complex interplay between mental and physical health is recognised. Information in the literature is complemented by interviews with key stakeholders in the sector and with examples of good practices and recommendations developed and implemented across the EU and farther to tackle psychosocial risks and their mental health consequences in construction.

5.1 Summary and discussion of results

The discussion in this section is divided alongside the main dimensions described above and includes a specific discussion on findings relative to exogenous drivers of labour market evolution identified as relevant to the sector: digitalisation, climate change and, more recently, the COVID-19 pandemic.

Some caution may be necessary in interpreting and extrapolating the main findings of this document, and this is related to underlying research limitations regarding the evidence discussed. Many studies on this topic have been conducted at the national level, but few pan-European studies exist. Studies are heterogeneous, sometimes small in terms of participants, and include a large variety of operational definitions, research objectives and methodologies of execution to identify the impact of psychosocial risks on construction workers' mental health. Additionally, no longitudinal studies have been identified that can assess the effects of psychosocial risks on mental health outcomes in the same population over time, with the most common research design of the studies being cross-sectional, often obtained from surveys.

5.1.1 Psychosocial risk factors and mental health in construction work

Common psychosocial risk factors associated with increased occupational stress include poor psychosocial environments, workplace bullying, high physical and psychological demands, workload and time pressures, role conflict, lack of job autonomy and control, lack of supervision, support and recognition, lack of participatory decision-making, and monotonous movements and tasks. All these factors are found to be significant context-derived stressors posing risks to workers' mental health.

Many psychosocial risk factors are associated with **tasks and working conditions**, with **work pressure and deadlines** having a substantial impact on mental health. Long working hours, unpredictable shift changes, work pace pressures, high work intensity within short timeframes, unrealistic work targets, low autonomy and a lack of job control threaten workers' job satisfaction. Such conditions, including high work demands, were found to contribute to workers' fatigue, anger and irritability levels and have a high impact on burnout, stress and depression (e.g. Bevan et al., 2022; Sun et al., 2022; Rodriguez et al., 2020).

High-risk work (entailing exposure to hazardous chemicals, noise or vibration) is common to construction activities and has a significant impact on workers' mental health, although it was perceived when interviewing stakeholders that these risks are not fully acknowledged by the workforce. This may be related to low education and awareness levels or the normalisation of risks over time given the prevalence of high-risk work in the sector. Uncomplaining attitudes may be perceived as positive to ensure job and income security. However, PTSD and panic attacks (a well-known symptom of PTSD) are found to be more prevalent in the construction sector compared to other industries (Chan et al., 2020; London et al., 2022), with some evidence suggesting a link with the high incidence of fatal accidents reported in a sector with the second highest incidence of fatal accidents at work in the EU (Eurostat, 2024).

Around 98% of the on-site construction workforce consists of men, and a **'macho' culture** prevails in the sector (CEDEFOP, 2023a). Thus, traditional ideas of masculinity may reinforce male stereotypes about physical and psychological endurance for high-risk work. By themselves, such beliefs pose potential health hazards and may encourage risk-taking behaviours. This prevents displays of vulnerability and inhibits help-seeking behaviours, according to the interviewees. Indeed, reluctance to seek help and discuss mental health issues is one of the most relevant risk factors endangering construction workers' wellbeing. Mental health stigma is high, with 71% of construction companies reluctant to openly discuss psychosocial issues or mental health (EU-OSHA, 2022c). Consequently, harmful coping strategies for managing psychosocial stress may be more tolerated and less stigmatised in the sector, such as alcohol and substance misuse behaviours. These behaviours are often considered traditional mechanisms of male bonding and camaraderie. Therefore, the importance of programmes such as MENTUPP that provide resources promoting peer support and enhance individual and organisational resilience are important steps for the sector.

Project-based structures, dispersed construction sites and frequent team changes are common in construction and have an impact on social and organisational relations that can lead to psychological distress. These factors contribute to social isolation, a primary mental health stressor in the industry, and 80% of UK construction workers find isolated working stressful (CIOB, 2020). Likewise, workers may feel a sense of rootlessness due to the absence of a fixed work location and the project-based nature of construction work. Interview respondents highlighted that wellbeing is impacted by workers' feelings of connection with teams and organisations.

Additionally, long working hours and commuting times to construction sites can exacerbate feelings of loneliness and isolation, further affecting work-family-life balance (Serv.be, 2016). Regardless of professional status, social isolation and stress have detrimental effects on workers' mental health outcomes (Sommovigo et al., 2021; Gómez-Salgado et al., 2023; Fagbenro et al., 2023).

Workplace communication problems in construction are also associated with language and interpersonal communication, as well as with loud noise. Language barriers specifically pose challenges to clear, consistent communication and can trigger stress associated with teamwork and can result in management issues connected with task delegation, change and project management. Lack of adequate feedback to workers, uncertainties about work pipelines and poor role clarity were identified as sources of mental distress in the literature, and somewhat less mentioned are the challenges arising from multicultural teams pointed out in the interviews with stakeholders. This may again suggest some general acceptance of the sector's organisational culture and working conditions, potentially linked to the sector's vulnerability to economic fluctuations and the impact this has on income and job stability.

Regardless, **verbal communication challenges** (e.g. language barriers) and **structural communication barriers** (e.g. dispersed coordination, team and worksite changes) could lead to conflict and negatively impact collaboration, teamwork and trust between peers, managers and supervisors, affecting the overall workplace experience. Indeed, studies found that workplace cultures characterised by a lack of openness, empathy, participatory decision-making and unexpected changes in project decisions diminish feelings of autonomy and increase stress levels (e.g. Powell, 2018; EU-OSHA, 2022c; Kotera et al., 2019; Flannery et al., 2019). Furthermore, **poor management skills**, including budgetary decision-making, **organisation management and frequent changes to work specifications**, are risk factors contributing to time, workload and work pace pressures impacting workers' occupational mental health and safety (Jensen & Kofoed, 2002). When these factors are combined with a disregard for workers' recovery needs, psychosocial risks to mental wellbeing increase.

Equally, **economic fluctuations**, particularly recessions, are a particular vulnerability for the sector, amplifying workers' job-related stress, contributing to feelings of anxiety. Low pay and financial instability are significant concerns and a critical risk for psychosocial wellbeing, contributing to feelings of job and financial insecurity, financial stress, instability and uncertainty, inducing occupational stress and, in some instances, burnout. Low pay and financial instability emerged as interdependent risk factors in the literature and were intertwined with social-economic factors, according to interviews conducted with several stakeholders in the sector. Interview participants also highlighted that socioeconomic factors contributing to feelings of job and financial insecurity include precarious and undeclared working arrangements, as well as subcontracting practices. Likewise, the literature shows that concerns about

a range of employment issues and salary disruptions play a crucial role in amplifying workers' job-related stress and contribute to feelings of anxiety (Bevan et al., 2022; Chan et al., 2020; CIF Ireland, 2020). The contribution of job and financial insecurity to mental health outcomes is likely linked to the interconnection between stable finances and the ability to meet the financial and social needs of workers and their dependents or families.

Other specific work-related psychosocial risks that emerged in construction were related to OSH workplace provisions, and low adherence to OSH practices during project delivery, including not wearing PPE. To some extent, and in addition to other causes, poor adherence to health and safety requirements could be related to the sector's 'macho' culture.

5.1.2 Sociodemographic variables, professional status and organisation type

Heightened exposure to psychosocial risk factors varies according to demographic factors, professional status and company size. In addition, the risk of experiencing adverse mental health outcomes increases according to the worker's gender, age, education and experience level, and migrant status.

Women represent a small fraction of the sector's workforce and are exposed to gender-specific risks such as sexism and psychological and sexual harassment, which trigger anxiety, feelings of marginalisation, guilt and self-blame (Curtis et al., 2018, 2022; Rotimi et al., 2023). Additionally, poorly designed PPE increases women's fear of physical accidents in the workplace. Poor organisational management of gender-based issues inflames women's wellbeing outcomes. Thus, initiatives such as Målarförbundet by the Swedish Painters' Union targeting gender-equal labour practices are of critical importance for female workers in the sector.

The visibility of **LGBTQ+** individuals in the construction sector is low, with no mentions in the interviews and only two pieces of literature identified on their experiences (Wright, 2013; FRA, 2020). Generally, LGBTQ+ individuals are exposed to discrimination, bullying and harassment, causing them to adopt strategies such as embodying masculine traits as defence mechanisms. The low visibility of LGBTQ+ individuals may be associated with machoism and toxic masculinity cultures, where LGBTQ+ disclosure could result in detrimental psychological and social outcomes.

The proportion of **migrant workers** employed in the sector is high, and they can be stratified into two groups: posted workers and non-EU migrants. Risks to migrant workers include extended periods of long-distance working, language barriers, the availability of accessible information, a higher exposure to intensified, unsafe and subpar working conditions, cultural barriers, and deficient OSH training and resources. This latter factor is likely related to the low-skilled positions migrants commonly access (Giraud et al., 2017). Meanwhile, specific challenges were associated with legislation, such as the Posted Workers Directive, causing increased worker stress, according to sector interviewees. These risks contribute to psychosocial stress, increase risks from physical health hazards, and reduce compliance with work rules and OSH procedures. Furthermore, multicultural teams can cause intra-group tensions, according to sector stakeholders. As such, the CSTP training programme addressing migrant workers' psychosocial risks and promoting intercultural workplace relationships and collaboration is a crucial initiative to mitigate OSH risks and team conflict in multicultural organisations.

The **age–experience trade-off** was found to significantly impact vulnerability in workplaces, with age and work experience positively correlated with resilience and confidence to challenge workplace cultures. Furthermore, research shows that young age is correlated with suicidal ideation (Ross et al., 2022). Psychosocial risks for young people include workplace bullying, harassment and exposure to subpar working conditions. Work–family conflict and marital, family and carer status increase younger workers' susceptibility to psychosocial stressors. Older age, on the other hand, is mostly protective against psychosocial risk exposure. However, weather-related stress is more prevalent among workers aged 55 plus, and age-related physical limitations can increase the risk of work-related injuries generating mental discomfort. Low skill discretion and job monotony, likely associated with years of experience, are other stressors for older workers.

Within the available literature, **managers, the self-employed, low-skilled workers and other higher-skilled worker groups** are prone to increased exposure to workload concerns, time pressures and

perceptions of workplace support (Kozlova & Lakisa, 2016; Chan et al., 2020; CIF Ireland, 2020; London et al., 2022). Available evidence shows that managers, the self-employed and other higher-skilled construction workers are more exposed to risks linked to job and financial security, which are dependent on successful project tenders (London et al., 2022; Bevan et al., 2022). Unique risks for self-employed workers associated with job and economic insecurity include a lack of organisational support, late payments and cost pressures impacting business viability. Similarly, psychosocial exposure inversely increases according to company size: workers in smaller companies are more susceptible to suffering from the psychosocial stressors likely related to SMEs' limited capacity to implement OSH psychosocial risk measures (Tijani et al., 2020b; EU-OSHA, 2022b).

Meanwhile, office-based construction workers and higher-skilled site-based professionals are more likely to be affected by depression and burnout than remote workers (Tijani et al., 2020b). Low-skilled construction workers are more worried about workplace conflict and more prone to suffering psychological violence from employers, thus risk higher exposure to stressors linked to job and financial insecurity (Kozlova & Lakisa, 2016; EU-OSHA, 2023b).

5.1.3 Digitalisation, climate change and the COVID-19 pandemic

Despite political emphasis on the green and digital transitions, limited studies were found concerning their impact on psychosocial risks and mental health outcomes in the sector.

The literature suggests some impacts of digital tools on cognitive demands and work-life-family balance (e.g. Fagbenro et al., 2023; Duckworth et al., 2024). **Digitalisation** has also been associated with classical stress responses, MSDs, digital fatigue, burnout and 'technostress' (EU-OSHA, 2021). Increased use of smart telephone technologies may blur work-life boundaries, increase working hours and workplace surveillance, and reduce non-work availability and overall work recovery time. Constant connection to work may lead to family and relationship conflicts. On a practical level, however, stress associated with digital tools, including smartphones, tablets and specialised apps, was considered less harmful by interviewees. This perspective may reflect the widespread acceptance of being constantly available in everyday life. As such, it appears widespread awareness of the risks associated with digital tools for adults is either low or minimised, which could be associated with a lack of knowledge about these potential risks and their impact on resting time.

From an organisational-level perspective, the increasing use of mobile-ICT technologies at work could influence psychosocial risk factors associated with traditional task management, feelings of workplace isolation, job autonomy and a lack of work-life balance (Tijani & Feng, 2021). On the other hand, interviewees pointed out that the introduction of AI and increasing digitalisation can instead improve site management capabilities and working conditions, protect workers from harmful and risky work environments, and hence increase workers' physical health and psychological wellbeing. Interview respondents and the evidence reviewed all underscored the need to close skill gaps and address the growing demand for skilled workers who can safely operate complex digital technologies and machinery. Likewise, the importance of good management and leadership skills to support the sector's digital transformation was raised (Tijani & Feng, 2021).

The published evidence ascertaining a connection between **climate change** and construction workers' psychosocial risks or mental health was scarce. Likewise, climate change did not emerge as a specific concern during interviews, despite construction (and agriculture) having been identified as 'vulnerable sectors' by the literature on climate change and OSH (EU-OSHA, 2023a; European Environment Agency [EEA], 2024; ILO, 2024). The studies identified were mostly from low- and middle-income countries and focused mainly on workers' physiological responses to heat stress (e.g. Xiang et al., 2014; Karthick et al., 2022a; Karthick et al., 2022b; Karthick et al., 2023). However, the literature results are still relevant to the European context, where heatwaves are becoming increasingly common. A recent EU-wide climate risk assessment highlights that extreme temperatures and frequent heatwaves in southern Europe have increased the incidence of heat stroke and fatalities among construction workers (EEA, 2024), and deaths in construction from extreme temperatures are increasing globally (ILO, 2024). Anxiety and depression, physical fatigue, psychological stress, hallucinations, impaired judgement and a lack of mental coordination were reported in two studies due to working in extreme temperatures, likely through heat stress mechanisms (Xiang et al., 2014; Karthick et al., 2023).

In relation to **COVID-19**, while the pandemic had the least impact on the European construction sector overall (EU-OSHA, 2022b), unrealistic expectations, extended working hours, and increased time pressures following initial delays and slowdowns associated with lockdowns and social distancing measures still had an impact on workers' wellbeing (Kaluarachchi et al., 2022; Jin et al., 2023; Dickson, 2023). Interviewees focused on the experiences of posted workers and migrants during the pandemic, and the difficulties of following the Posted Workers Directive. This underscores the normalisation of difficult working conditions in a sector sensitive to wider macroeconomic fluctuations. Feelings of workplace isolation were associated with mobility restrictions during the pandemic, according to the literature and stakeholder representatives.

Stress, anxiety and depression increased as financial security amplified in the sector during the COVID-19 pandemic. Other mental health outcomes reported included feelings of loneliness, irritability and increased suicidal thoughts (Kaluarachchi et al., 2022; Jin et al., 2023; Dickson, 2023; Pamidimukkala & Kermanshachi, 2021). However, it is very difficult or impossible to disentangle work-related stressors from other psychosocial stress factors that occurred and intensified outside work during this period. The literature pointed towards women, migrants and older workers as particularly susceptible to psychosocial risks, possibly due to virus containment measures. This susceptibility was largely associated with infection risk, gender divisions of labour, and the living and working conditions of migrant workers. Additionally, stressors for planners and company owners were identified in the literature, largely associated with disruptions of human and material resources due to lockdowns and social distancing measures.

5.1.4 The impact of psychosocial risks on construction workers' mental health and consequences for organisations

The available research demonstrates that work-related psychosocial risk exposure contributes to a high risk of adverse mental health outcomes factors (FLC, 2016; Perez-Alonso et al., 2021). Feelings of **uncertainty, anxiety, stress, and physical and mental fatigue** are the most prevalent outcomes of occupational stress associated with limited structural and financial control and perceptions of powerlessness at work. Sleep disturbances, feelings of anger and irritability, symptoms of anxiety, depression and burnout emerged frequently in the literature as adverse mental health outcomes. **Depression and burnout** outcomes are largely connected to low job control, low support levels, role conflict and job insecurity. The **cognitive impacts** of poor mental wellbeing were less explored but found to increase risk-taking behaviours, contribute to workers' distraction and cause reduced concentration levels (CIOB, 2020; Duckworth et al., 2024). **Behavioural outcomes**, such as substance abuse, may be linked to task design, working conditions, organisational cultural norms and inadequate social support.

Other responses to occupational stress included **thoughts of self-harm**, and **suicide** was one of the most common mental health outcomes among manual and trade workers (Duckworth et al., 2024). Suicide rates are higher among male construction workers than the general population, with data showing that men working in construction are three times more likely to die from suicide (British Office for National Statistics, 2019), with an age-standardised suicide rate of 26.6 per 100,000 people in the Australian construction sector (Maheen et al., 2022). There is an urgent need to investigate the incidence of suicide in the European construction sector, as data on this issue are absent. Common risk factors contributing to suicide outcomes include exposure to suicidal behaviours from peers, prolonged periods of financial insecurity, age and transitional unemployment (Ross et al., 2022). Organisations wishing to tackle suicide risk in the workplace may want to consider providing mental health first aiders, an initiative promoted by the Lighthouse Construction Industry Charity.

Mental health problems in the workforce significantly affect **construction business productivity** and the overall economy, although official numbers may underestimate the issue. In Ireland, mental health was found to be a key factor in absenteeism rates for 49% of construction companies, and 23% of national construction businesses reported decreased productivity due to the mental health concerns of one employee (CIF Ireland, 2020). Consequently, workers' mental health problems have a considerable impact on organisational outcomes, including productivity, workplace burnout, absenteeism, presenteeism and worker turnover (see Tijani et al., 2020b). Risk factors influencing absenteeism and

presenteeism include toxic masculinity cultures, organisational trust levels, substance misuse, demanding ergonomic conditions, job insecurity and feelings of job autonomy.

5.1.5 Strategies for enhancing construction workers' mental health

Demographic factors, professional status and company size can protect against the worst effects of exposure to psychosocial risk factors. Contractual conditions and workplace satisfaction, along with strong family relationships, social networks and self-compassion, are powerful mitigators in preventing mental ill health from progressing to long-term mental illness.

Focusing on the **organisational determinants of mental health** (e.g. workload, time pressures, interpersonal communication) rather than individual factors (e.g. substance misuse, relationship problems) is strongly advocated for by the literature and sector stakeholders, as evidence shows that performative self-help tools fail to adequately address the root cause of work-related stressors (Hulls et al., 2022; Bevan et al., 2022). Effective organisational strategies include regular workload reviews, allowing workers to self-pace their workloads, team building, creating psychosocially safe working environments and deploying participatory leadership practices. These approaches appear to positively impact health-promoting behaviours and create better working environments (Grill et al., 2017).

Improving salary and professional status, providing career development opportunities and salary incentive systems, and mental health training can drive job engagement, satisfaction and worker wellbeing (see Li et al., 2022; Hasan et al., 2021b). In Australia, job-related mental health training has significantly contributed to reduced suicide rates among construction workers (Maheen et al., 2022; see EU-OSHA, 2023b for further information).

The positive use of and the ongoing digitalisation and automation of the sector can further protect against psychosocial risk exposure. Introducing innovative production techniques, standardised processes and embedding OSH standards in tendering criteria can mitigate physical and mental health risks, decrease ergonomic demands and enhance OSH surveillance, according to the literature and sector stakeholders alike.

5.2 Considerations for further action

5.2.1 Future research directions

This study has identified a series of knowledge gaps that can inspire or guide future research efforts in the field of psychosocial risks exposure and associated mental health outcomes in construction.

Overall, future EU research in this area should consider:

- **Increasing geographical coverage:** Except for a small body of evidence coming from the Netherlands, most European research on psychosocial risks exposure in the construction sector is currently sparse with isolated publications conducted in a variety of countries (e.g. Denmark, Germany, Ireland, Spain, Italy, Latvia, Sweden for the EU; UK for non-EU). Therefore, there is a need for further research including larger samples that allows for EU-level comparisons to be drawn.
- **Focusing on specific research study-designs:** Large longitudinal study designs with sufficient follow-up time are missing, which would be valuable and informative to better understand the relationships between psychosocial risks and adverse mental health outcomes and help establish possible causal mechanisms specific to the sector as well as understand the complex interplay with other prevalent exposures and health outcomes occurring in construction work (for example, MSDs or physical exposures). Well-designed and controlled intervention studies to monitor and evaluate the impact of interventions in the sector are also needed, demonstrating the effectiveness of individual and organisational interventions as well as identifying barriers and facilitators for their successful implementation and rollout is. Studies addressing the cost-effectiveness of mitigating and managing psychosocial risks in relation to workers' performance and organisational outcomes would provide valuable information for practice and for policymaking.

Additionally, some topics have been identified in this report for which more sector-specific research in relation to work-related psychosocial risks and mental health would be needed. These are:

- **Digitalisation:** The literature on the impact of digitalisation on the working environment of construction workers is scarce at both the global and European level. While the potential dangers of ‘technostress’ have been hypothesised, evidence is soundly missing from studies specific to construction, looking into workers’ experiences with information and communication technologies, or the use of robotics and other technologies specific to the work in the sector in different job categories and age groups, for example. Broader knowledge is required on the extent of psychosocial risk factors and mental health outcomes derived from increased digitalisation in construction work.
- **Climate change:** The construction sector, which includes frequent outdoor work, is considered vulnerable to the impacts of climate change stressors. This study identified a significant research gap in understanding the mental health effects of climate change on construction workers, particularly in the EU context. Most research on the topic has focused on heat stress and workers’ physiological responses. Studies have been prevalently conducted in low- and middle-income countries, with an emphasis on tropical regions. Considering the increasing frequency of extreme weather events in Europe and their impacts on psychological wellbeing in other settings, there is an urgent call for more research directed at better understanding the association between extreme or persistent weather events and workers’ mental health in the EU, as well as on best strategies for psychological adaptation (management) and prevention from these climate-associated consequences.
- **Vulnerable workers:** The literature identified was sufficiently detailed to identify specific psychosocial risks and their distribution, affecting specific groups of vulnerable workers. However, EU-focused evidence in this area is still scarce. Female and LGBTQ+ workers in construction have been mostly addressed by the Anglo-Saxon literature, and both these and migrant-dedicated studies were more subject to qualitative reviews than quantitative research.
- **Suicide:** This report has noted the presence of high suicide rates in the construction sector, but the evidence comes largely from Anglo-Saxon literature. This overview was unable to retrieve specific EU-level studies or updated statistics on the prevalence and causes of this phenomenon. EU research funds and OSH research programmes should direct their efforts to research this issue to better understand both the magnitude and the preventable roots of suicide.

5.2.2 Lessons learned

This section provides a collection of suggestions on the practical measures that could be implemented mainly at the workplace level in relation to work-related psychosocial risks and mental health. The selection is based on the relevant literature identified in this report, including both peer-reviewed and grey literature, and considers the opinions from various stakeholders gathered during the interviews presented in detail in Section 3.

Workplaces

- **Promote work’s positive impact on mental health.** Increase positive aspects of construction work, including keeping workers informed, providing wellbeing activities and social engagement through site events and acknowledging milestones.
- **Reduce the harmful impacts of psychosocial risks at work.** Be sensitive to work-related risk factors relative to task/job design, working conditions and social relations at work. Identify specific tasks that make work more likely to contribute to poor mental health in your company and roll out practical measures, including optimising employees’ work design, ensuring workers’ skills match task requirements, reducing role conflict and ambiguity, and improving role clarity and performance feedback to foster a stress- and accident-free environment. Enhancing and diversifying communication strategies (e.g. information meetings, feedback sessions, employee

surveys, using advanced project management instruments such as software for scheduling management) and implementing a greater participatory approach in defining the content and structure of work can greatly improve the on-field situation. For more detailed guidance, the EFBWW and FIEC publication on psychosocial risks in construction is a valuable resource (see Section 4).

- **Engage staff, seek honest feedback** and routinely review employees' subjective wellbeing as a critical step in demonstrating organisational commitment to improve mental health in the workplace. Giving workers opportunities to contribute and collaborate on mental health outcomes is crucial to shifting the understanding of mental health issues from personal struggles to work-related challenges and to destigmatising mental health in the workplace. Approaches, such as the one adopted by the PORR Group, illustrate actions that can be implemented (see Section 4).
- **Invest in mental health training initiatives** to empower workers to identify and address mental health issues effectively. Provide training and educational programmes for all construction personnel incorporating suicide prevention, stress management and conflict resolution to help build resilience in the sector's workforce. Training should highlight the work-specific psychosocial stressors, including exposure to harmful physical and chemical exposures, that affect not only physical but also mental wellbeing. Training programmes should focus on fostering cultures of respect, inclusivity (avoiding language barriers for access to content in subgroups of workers, e.g. migrants), and gender sensitivity with modules that address stereotypes and biases and tackle the impact of 'macho' cultures in the workplace.
- **Promote a supportive and inclusive culture** for all workers, including women, migrant workers and other groups, by implementing diversity and inclusion programmes. Construction companies can help promote a supportive and inclusive culture by educating workers on the cultural barriers and differences among workers from different backgrounds to create better working environments. Creating more inclusive work environments can help reduce discrimination, increase job satisfaction and foster a sense of belonging among all workers, especially where several companies are working on the same construction project. Practices could draw upon the Women in Construction initiative and CTSP cited in Section 4.
- **Develop and inform all staff of existing company guidelines and procedures regarding managing mental health.** Policies and procedures should be succinct, jargon free, and in line with evidence and best practices. The core aim should be to establish a clear pathway to appropriate care for workers experiencing mental health difficulties. Good mental health policies and guidelines will prove ineffective unless backed up by a collaborative and compassionate, psychologically safe company culture where good practices are implemented, teamwork is rewarded and support is encouraged, and health and safety management, including management of psychosocial risks, are prioritised in the workplace.
- **Integrate and upskill OSH assessors' capacity to evaluate psychosocial risks** in the workplace within standard risk assessments. This will strengthen the overall risk assessment process, as many companies lack the proper knowledge and fail to carry out a holistic OSH assessment.
- **Large construction companies** should attempt to extend the reach of worker prevention and assistance programmes to subcontracted workers from external companies, whether in terms of information or by providing support for conducting psychosocial risk assessments. In this way, resource gaps for psychosocial risk prevention in smaller companies would be addressed.
- **Ensure adherence to OSH standards** by embedding OSH provisions, including those related to psychosocial risks and mental health, in tendering criteria and supply chain practices to prioritise worker wellbeing across the construction sector.
- **Promote work-life balance** through flexible work arrangements, paid time off and wellness programmes, which can contribute to reducing stress and preventing burnout among employees. This can also provide extra support for workers experiencing challenges with

family–work balance, which greatly increases workers' stress. Creating a supportive work environment that values work–life balance can enhance worker morale and mental wellbeing.

Workplace mental health services:

- **Facilitate early intervention and treatment of workers' mental health conditions.** Workplaces need to provide clear pathways through which workers with mental health issues can be provided with appropriate support and care. Programmes to increase the uptake of individuals with poor help-seeking attitudes may contribute to breaking down stigma in the sector about psychological wellbeing and prevent more severe mental health outcomes from occurring.
- **Ensure confidentiality when offering mental health services.** This is a critical component of the effective management of mental health, as a social stigma still exists around reporting. Confidentiality is key to encouraging more staff to come forward and seek help.
- **Provide organisational return-to-work support following sick leave for mental health problems,** following evidence-based interventions enhancing work return (e.g. combined cognitive behavioural techniques with a focus on work, a tailored and gradual return plan, implement workplace adjustments in terms of tasks, flexible working hours, etc.). These initiatives should be supported by employers. An overview of effective return-to-work interventions is provided in the EU-OSHA OSH wiki article (2020). Additionally, ensure access to occupational health services to assess psychosocial risks and follow up on mental health-related issues.
- **Establish specially designed support services for workers in specific subgroups** that may be at increased risk of suffering from adverse psychosocial circumstances in the sector, such as women workers, young adults (with less work experience and fewer resources to deal with sector-specific challenges), subcontracted and self-employed workers, older manual workers (experiencing declines in physical capacity and sometimes a desire to retire), and workers from small companies with limited OSH resources.

Peer networks and community resources:

- **Establish and promote peer support networks within construction,** to reduce feelings of isolation with particular emphasis on the self-employed and sole traders. These networks have the potential to connect people in construction on a range of issues, not least mental health. Opportunities to connect with others in a similar position and share experiences can improve social connection, teamwork and collaboration, and enhance overall mental wellbeing and resilience in the workplace.
- **Fund and promote/disseminate awards recognising organisations** that have performed well in relation to mental health and wellbeing in their workplace. Promote the best initiatives. In parallel, develop better metrics for measuring the effectiveness of mental health initiatives and allow comparability. This will make it easier to evaluate the success of any initiative and whether it should be widely implemented.

5.2.3 Policy pointers

This section presents a selection of policy pointers based on the results of this study for institutional action at European, national and sectoral levels.

- **Assist construction businesses with more limited resources** to tackle psychosocial risks and mental health, including SMEs and the self-employed. This could happen, for example, through the development of pro bono bursary funds supporting mental health wellness, access to independent counsellors or the provision of digital platforms with specific resource areas.
- **Develop targeted campaigns with funding support** to address tangible and operational problems that affect small businesses and individual workers in difficult economic circumstances (e.g. bridging late payments, support for material acquisition), since a strong link has been shown between financial stability and the mental health of construction workers. Support small company owners to invest in mental health resources, as this can be a significant challenge and perceived burden for implementing changes. A positive evaluation of these actions could qualify for funding to support wider uptake.
- **Sectoral and multi-employer collective agreements should consider and address psychosocial risks and mental health** by developing targeted actions to improve OSH, as European and national social partners play an important role in creating healthy workplaces. Actions may include updated guidance for labour inspectors to identify and evaluate psychosocial risks and mental health in workplaces. Initiatives to tackle psychosocial risks and mental health in the sector should consider the variety of occupations within the sector, as different actions may be needed for developers of building projects, on-site workers, posted workers and the migrant workforce in construction.
- **All risk factors, including those pertaining to MSDs**, should be addressed in OSH policy and legislative interventions and initiatives aiming to promote mental health and wellbeing in the construction sector, as lifting heavy loads and physical/chemical hazards are also psychosocial risk factors.
- **Include gender-specific perspectives** when developing and implementing initiatives on psychosocial risk and ill mental health prevention in a traditionally male-dominated sector, as women are uniquely exposed to selected psychosocial risks in construction compared to other sectors of economic activity.
- **Ensure tendering criteria for public procurement** in construction include strict requirements for OSH that incorporate provisions to reduce psychosocial risks and protect workers' mental health.
- **Promote cooperation between national OSH institutions across the EU** and provide guidance specific to the various types of construction workers. Increase awareness of mental health resources available at national level and within the community, such as counselling services, support groups and hotlines, that can provide additional support for employees facing mental health challenges.

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Appendices

Appendix A — Semi-structured interview questionnaire

General questions

Name:	
Organisation:	
Job position:	
Sector:	

What is your professional background and experience regarding psychosocial risks (PSRs) and mental health in your industry?

Psychosocial risks and mental health

From our preliminary literature overview of relevant publications and EU-OSHA materials, we have created a non-exhaustive list of PSR categories specifically relevant in both the construction and agriculture sectors.

- 1) How do the following factors impact the mental wellbeing of workers in the construction sector?
 - Long working hours
 - Work pressure and deadlines
 - Job insecurity (e.g. posting or temporary contract)
 - Socio-cultural norms
 - Socioeconomic context
 - Physical demands
 - High-risk work
 - Noise and environmental hazards
 - Vulnerability to economic recessions
 - Skill gaps facing technological evolution

- 2) Could you please rate how each of them impacts the mental wellbeing of workers in the agricultural sector on a rating scale of 1-5, where 1 is 'not at all impactful', and 5 is 'very impactful'?

- 3) How do the following factors impact the mental wellbeing of workers in agriculture?
 - Isolation and loneliness
 - Uncertainty and unpredictability (e.g. seasonality impact, weather events, pest infestation)
 - Role conflict and work–life balance
 - Socio-cultural norms (the expectations of traditional family roles, male socialisation and models of masculinity)
 - Socioeconomic context
 - Social stigma
 - Financial pressures
 - Physical demands
 - Growing regulatory and administrative pressures
 - Exposure to environmental hazards

- Lack of attractiveness of farming (due to unpopularity of the sector, so-called *farmer bashing*)
 - Vulnerability to climate change
- 4) Could you please rate how each of them impacts the mental wellbeing of workers in the agricultural sector on a rating scale of 1-5, where 1 is 'not at all impactful', and 5 is 'very impactful'?
 - 5) Are there any other PSR factors in your sector? What are their main causes?
 - 6) In your experience, how common are these PSRs in your sector? Have you noticed any changes over time? Do you have any relevant quantitative data to share in this regard?
 - 7) To what extent are these factors unique for your sector?
 - 8) What are the main challenges in addressing PSRs in your sector? To what extent are PSRs and mental health issues given due attention?
 - 9) What are, from your experience, the newly emerging labour market trends and/or conditions that may affect psychosocial risks and how will they affect them? (e.g. digitalisation, employment trends, etc.)
 - 10) How do the following factors positively impact the mental wellbeing of workers in your sector?
 - Job autonomy and flexibility
 - Job satisfaction (in the sense of 'providing for the family', particularly so for seasonal and migrant workers)
 - Farmer social support (having a shared identity, availability of close relations, community trust and so on)
 - Own family (partner, children, etc.)
 - Diversified work
 - Work and living environment
 - Support system (friends, neighbours)
 - Sufficient income
 - Sufficient free time
 - Own hobby
 - 11) Could you please rate how each of them positively impacts the mental wellbeing of workers in your sector on a rating scale of 1-5, where 1 is 'not at all impactful', and 5 is 'very impactful'?

Psychosocial risks/mental health management

- 12) Which strategies or approaches can be effective in managing and preventing PSRs in your sector?
- 13) What are success factors and the barriers to implementing these strategies and approaches? What could be done to facilitate their implementation (potential support, etc.)?
- 14) Do PSRs differ depending on the company size? Do they differ depending on the employment type? Do they differ based on other factors, and if so, which ones?
- 15) What are the requirements regarding risk assessment and management in the workplace regarding PSRs and/or mental health?
- 16) Do you think that psychosocial risks are sufficiently addressed? If not, what could be done to increasingly address the issue?

Prevention and rehabilitation measures

- 17) Are you aware of any recommendations on addressing PSRs and promoting mental health in your sector?
- 18) How well are these recommendations applied by companies? What are the main success factors and challenges as regards application and uptake?
- 19) Are you aware of any interventions that could be defined as a good practice? Could you share any relevant information you have regarding these interventions and/or can put us in touch with a contact person?
- 20) Could you give some more information about the(se) intervention(s)? What is the main objective? What did the intervention(s) consist of? What is the level of intervention (organisational, regional, etc.)? What is the target group? What is the status of the intervention(s) (duration, implemented, ongoing, etc.)? What were the main outcomes?
- 21) Is the intervention based on any existing recommendation?

Vulnerable groups

- 22) Are there specific subgroups of workers in the sector at greater risk for psychosocial challenges (e.g. migrant workers, unskilled workers, ageing workers, women, etc.)? If so, which ones?
- 23) What are your insights into how psychosocial risk factors may vary among different groups of workers in your sector? What are the main differences you observe, and what challenges arise in addressing these differences?
- 24) Are there any specific recommendations or initiatives aimed at different target groups? (e.g. migrant workers, unskilled workers, ageing workers, women, etc.)?
- 25) Are there any additional difficulties regarding social support that migrant workers face due to being away from their home countries?

Concluding questions

- 26) Based on your knowledge and experience, do you have any additional recommendations, or do you know of other innovative approaches for addressing psychosocial risks and promoting mental health in your sector that may not be widely recognised or already mentioned?
- 27) Is there any other information and/or recommendations that you would like to share? Are there any stakeholders that you would recommend consulting for recommendations and the identification of good practices?

Appendix B — National social partners & industry associations

General questions

Name:	
Organisation:	
Job position:	
Sector:	

What is your professional background and experience regarding psychosocial risks (PSRs) and mental health in your industry?

Psychosocial risks and mental health

From our preliminary literature overview of relevant publications and EU-OSHA materials, we have created a non-exhaustive list of PSR categories specifically relevant in both the construction and agriculture sectors.

- 1) How do the following factors impact the mental wellbeing of workers in the construction sector?
 - Long working hours
 - Work pressure and deadlines
 - Job insecurity (e.g. posting or temporary contract)
 - Socio-cultural norms
 - Socioeconomic context
 - Physical demands
 - High-risk work
 - Noise and environmental hazards
 - Vulnerability to economic recessions
 - Skill gaps facing technological evolution

- 2) Could you please rate how each of them impacts the mental wellbeing of workers in the agricultural sector on a rating scale of 1-5, where 1 is 'not at all impactful', and 5 is 'very impactful'?

- 3) How do the following factors impact the mental wellbeing of workers in agriculture?
 - Isolation and loneliness
 - Uncertainty and unpredictability (e.g. seasonality impact, weather events, pest infestation)
 - Role conflict and work–life balance
 - Socio-cultural norms (the expectations of traditional family roles, male socialisation and models of masculinity)
 - Socioeconomic context
 - Social stigma
 - Financial pressures
 - Physical demands
 - Growing regulatory and administrative pressures
 - Exposure to environmental hazards
 - Lack of attractiveness of farming (due to unpopularity of the sector, so-called *farmer bashing*)
 - Vulnerability to climate change

- 4) Could you please rate how each of them impacts the mental wellbeing of workers in the agricultural sector on a rating scale of 1-5, where 1 is 'not at all impactful', and 5 is 'very impactful'?
- 5) Are there any other PSR factors in your sector? What are their main causes?
- 6) To what extent are these factors unique for your sector?
- 7) In your experience, how common are these PSRs in your sector? Have you noticed any changes over time? Do you have any relevant quantitative data to share in this regard?
- 8) What are the main challenges in addressing PSRs in your sector? To what extent are PSRs and mental health issues given due attention?
- 9) What are, from your experience, the newly emerging labour market trends and/or conditions that may affect psychosocial risks and how will they affect them? (e.g. digitalisation, employment trends, etc.)
- 10) How do the following factors positively impact the mental wellbeing of workers in your sector?
 - Job autonomy and flexibility
 - Job satisfaction (in the sense of 'providing for the family', particularly so for seasonal and migrant workers)
 - Farmer social support (having a shared identity, availability of close relations, community trust and so on)
 - Own family (partner, children, etc.)
 - Diversified work
 - Work and living environment
 - Support system (friends, neighbours)
 - Sufficient income
 - Sufficient free time
 - Own hobby
- 11) Could you please rate how each of them positively impacts the mental wellbeing of workers in your sector on a rating scale of 1-5, where 1 is 'not at all impactful', and 5 is 'very impactful'?

Psychosocial risks/mental health management

- 12) Which strategies or approaches can be effective in managing and preventing PSRs in your sector?
- 13) What are success factors and the barriers to implementing these strategies and approaches? What could be done to facilitate their implementation (potential support, etc.)?
- 14) Do PSRs differ depending on the company size? Do they differ depending on the employment type? Do they differ based on other factors, and if so, which ones?
- 15) What are requirements regarding risk assessment and management in the workplace regarding PSRs and/or mental health?
- 16) Do you think that psychosocial risks are sufficiently addressed? If not, what could be done to increasingly address the issue?

Prevention and rehabilitation measures

- 17) Are you aware of any recommendations on addressing PSRs and promoting mental health in your sector?

- 18) How well are these recommendations applied by companies? What are the main success factors and challenges as regards application and uptake?
- 19) Are you aware of any interventions that could be used as a good practice? Could you share any relevant information you have regarding these interventions and/or can put us in touch with a contact person?
- 20) Could you give some more information about the(se) intervention(s)? What is the main objective? What did the intervention(s) consist of? What is the level of intervention (organisational, regional, etc.)? What is the target group? What is the status of the intervention(s) (duration, implemented, ongoing, etc.)? What were the main outcomes?
- 21) Is the intervention based on any existing recommendation?

Vulnerable groups

- 22) Are specific subgroups of workers in the sector at greater risk for psychosocial challenges (e.g. migrant workers, unskilled workers, ageing workers, women, etc.)? If so, which ones?
- 23) What are your insights into how psychosocial risk factors may vary among different groups of workers in your sector? What are the main differences you observe, and what challenges arise in addressing these differences?
- 24) Are there any specific recommendations or initiatives aimed at different target groups? (e.g. migrant workers, unskilled workers, ageing workers, women, etc.)? What are specific subgroups of workers in the sector who are at greater risk for psychosocial challenges (e.g. women, migrants)?

Concluding questions

- 25) Based on your knowledge and experience, do you have any additional recommendations, or do you know of other innovative approaches for addressing psychosocial risks and promoting mental health in your sector that may not be widely recognised or already mentioned?
- 26) Is there any other information and/or recommendations that you would like to share? Are there any stakeholders that you would recommend consulting for recommendations and the identification of good practices?

Appendix C — Organisations and networks

General questions

Name:	
Organisation:	
Job position:	
Sector:	

What is your professional background and experience regarding psychosocial risks (PSRs) and mental health in your industry?

Psychosocial risks and mental health

From our preliminary literature overview of relevant publications and EU-OSHA materials, we have created a non-exhaustive list of PSR categories specifically relevant in both the construction and agriculture sectors.

- 1) How do the following factors impact the mental wellbeing of workers in the construction sector?
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 - Socio-cultural norms
 - Socioeconomic context
 - Physical demands
 - High-risk work
 - Noise and environmental hazards
 - Vulnerability to economic recessions
 - Skill gaps facing technological evolution

- 2) Could you please rate how each of them impacts the mental wellbeing of workers in the agricultural sector on a rating scale of 1-5, where 1 is 'not at all impactful', and 5 is 'very impactful'?

- 3) How do the following factors impact the mental wellbeing of workers in agriculture?
 - Isolation and loneliness
 - Uncertainty and unpredictability (e.g. seasonality impact, weather events, pest infestation)
 - Role conflict and work–life balance
 - Socio-cultural norms (the expectations of traditional family roles, male socialisation and models of masculinity)
 - Socioeconomic context
 - Social stigma
 - Financial pressures
 - Physical demands
 - Growing regulatory and administrative pressures
 - Exposure to environmental hazards
 - Lack of attractiveness of farming (due to unpopularity of the sector, so-called *farmer bashing*)
 - Vulnerability to climate change

- 4) Could you please rate how each of them impacts the mental wellbeing of workers in the agricultural sector on a rating scale of 1-5, where 1 is 'not at all impactful', and 5 is 'very impactful'?
- 5) Are there any other PSR factors in your sector? What are their main causes?
- 6) To what extent are these factors unique for your sector?
- 7) What are, from your experience, the newly emerging labour market trends and/or conditions that may affect psychosocial risks and how will they affect them? (e.g. digitalisation, employment trends, etc.)?
- 8) How do the following factors positively impact the mental wellbeing of workers in your sector?
 - Job autonomy and flexibility
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 - Own family (partner, children, etc.)
 - Diversified work
 - Work and living environment
 - Support system (friends, neighbours)
 - Sufficient income
 - Sufficient free time
 - Own hobby
- 9) Could you please rate how each of them positively impacts the mental wellbeing of workers in your sector on a rating scale of 1-5, where 1 is 'not at all impactful', and 5 is 'very impactful'?

Psychosocial risks/mental health management

- 10) Which strategies or approaches can be effective in managing and preventing PSRs in your sector?
- 11) What are success factors and the barriers to implementing these strategies and approaches? What could be done to facilitate their implementation (potential support, etc.)?
- 12) Do PSRs differ depending on the company size? Do they differ depending on the employment type?
- 13) What are requirements regarding risk assessment and management in the workplace regarding PSRs and/or mental health?
- 14) Do you think that psychosocial risks are sufficiently addressed? If not, what could be done to increasingly address the issue?

Prevention and rehabilitation measures

- 15) Are you aware of any recommendations on addressing PSRs and promoting mental health in your sector?
- 16) Are you aware of any interventions that could be used as a good practice? Could you share any relevant information you have regarding these interventions and/or can put us in touch with a contact person?
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- 18) Is the intervention based on any existing recommendation?

Vulnerable groups

- 19) Are specific subgroups of workers in the sector at greater risk for psychosocial challenges (e.g. migrant workers, unskilled workers, ageing workers, women, etc.)? If so, which ones?
- 20) What are your insights into how psychosocial risk factors may vary among different groups of workers in your sector? What are the main differences you observe, and what challenges arise in addressing these differences?
- 21) Are there any specific recommendations or initiatives aimed at different target groups? (e.g. migrant workers, unskilled workers, ageing workers, women, etc.)? What are specific subgroups of workers in the sector who are at greater risk for psychosocial challenges (e.g. women, migrants)?

Concluding questions

- 22) Based on your knowledge and experience, do you have any additional recommendations, or do you know of other innovative approaches for addressing psychosocial risks and promoting mental health in your sector that may not be widely recognised or already mentioned?
- 23) Is there any other information and/or recommendations that you would like to share? Are there any stakeholders that you would recommend consulting for recommendations and the identification of good practices?

The European Agency for Safety and Health at Work (EU-O SHA) contributes to making Europe a safer, healthier and more productive place to work. The Agency researches, develops, and distributes reliable, balanced, and impartial safety and health information and organises pan-European awareness raising campaigns. Set up by the European Union in 1994 and based in Bilbao, Spain, the Agency brings together representatives from the European Commission, Member State governments, employers' and workers' organisations, as well as leading experts in each of the EU Member States and beyond.

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