

Telework and health risks in the context of the COVID-19 pandemic: evidence from the field and policy implications

Executive Summary

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This summary was commissioned by the European Agency for Safety and Health at Work (EU-OSHA). Its contents, including any opinions and/or conclusions expressed, are those of the authors alone and do not necessarily reflect the views of EU-OSHA.

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Luxembourg: Publications Office of the European Union, 2021

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Introduction

The unprecedented extension of telework as a result of the COVID-19 outbreak has raised questions about the impact of this form of work organisation in the long term. While telework is likely to become more prominent for companies and employees, occupational safety and health (OSH) aspects need further attention. This study focuses on telework and OSH aspects, addressing the following research questions:

- What is the current state of knowledge about the impact of telework on the incidence of psychosocial risks and musculoskeletal disorders (MSDs)? What are the main factors modulating these impacts and have these been affected by the practice of extended telework during the COVID-19 pandemic?
- How has the COVID-19 pandemic changed telework patterns and the composition of the teleworking population? To what extent are these changes temporary or permanent? What are the differences in the experience of telework among different groups of workers?
- What are the new regulatory and policy developments related to the practice of telework? How do they impact on working conditions and, in particular, on OSH?

The study has combined desk and fieldwork research. An extensive review of the literature on telework has been carried out. The analysis of regulation of telework was based on EU-OSHA's consultation with its national focal point (FOP) network in autumn 2020 and an additional literature review ⁽¹⁾. The fieldwork was carried out in three countries (Spain, France and Italy) from February to May 2021 through semi-structured interviews (48 interviews with employees and 18 interviews with employers).

Teleworking patterns

The prevalence of telework in the 27 Member States of the EU (EU-27) was rather modest in 2019. It was mostly concentrated in the group of highly skilled professionals and managers as an occasional work pattern ⁽²⁾.

This situation changed drastically with the outbreak of the COVID-19 pandemic, as telework became the norm for all jobs in which it was technically feasible. At the peak of the pandemic (July 2020), nearly one half of employees were working from home at least part of their working time, of which nearly one half had no former experience of this work arrangement ⁽³⁾.

Data from the 2020 EU Labour Force Survey show a substantial increase in the prevalence of regular telework among employees in the EU-27: from 3.2 % in 2019 to 10.8 % in 2020. The share of employees occasionally working from home has remained stable (7.9%).

It has been estimated that around one third of dependent employment in the EU-27 could be carried out remotely ⁽⁴⁾. Some research has been conducted to explore whether, and in what ways, the massive shift to working from home during the COVID-19 crisis may have entailed sustainable changes in companies' work organisation practices and workers' perceptions, and will remain an option for those occupations that previously did not have access to this work arrangement:

- Some studies suggest that the perceptions of working from home of both employees and managers have substantially improved since the beginning of the pandemic, which is translated into a generalised preference for hybrid work arrangements ⁽⁵⁾.
- The main challenges are how to adapt control and performance monitoring for occupations that have been traditionally subject to direct supervision, namely medium-skilled jobs ⁽⁶⁾ and how to

⁽¹⁾ EU-OSHA (European Agency for Safety and Health at Work) (2021), *Regulating telework in a post-COVID-19 Europe*. Available at: <https://osha.europa.eu/en/publications/regulating-telework-post-covid-19-europe/view>

⁽²⁾ Sostero, M., Milasi, S., Hurley, J., Fernández-Macías, E. & Bisello, M. (2020), *Teleworkability and the COVID-19 crisis: a new digital divide?* European Commission Joint Research Centre, Seville.

⁽³⁾ Eurofound (2020), *Living, working and COVID-19*. Publications Office of the European Union, Luxembourg.

⁽⁴⁾ Sostero, M., Milasi, S., Hurley, J., Fernández-Macías, E. & Bisello, M. (2020), *Teleworkability and the COVID-19 crisis: a new digital divide*. European Commission Joint Research Centre, Seville.

⁽⁵⁾ Microsoft Work Trend Index (2021), 'The next great disruption is hybrid work — are we ready?'. Available at: <https://www.microsoft.com/en-us/worklab/work-trend-index>; Barrero, J. M., Bloom, N. & Davis, S. J. (2020). *Why working from home will stick*. Becker Friedman Institute for Economics Working Paper. (2020-174). University of Chicago, Chicago, IL.

⁽⁶⁾ Sostero, M., Milasi, S., Hurley, J., Fernández-Macías, E. & Bisello, M. (2020), *Teleworkability and the COVID-19 crisis: a new digital divide?* European Commission Joint Research Centre, Seville.

ensure coordination and knowledge transfer in occupations involving a high degree of task interdependence and teamwork ⁽⁷⁾.

- It remains to be explored how telework might be incorporated into occupations with a high demand for social interaction.

In this regard, fieldwork findings can be summarised as follows:

- Enforced telework has provided a learning opportunity for a large number of companies and employees, especially those with limited or no former experience of this work arrangement: these adjustments have required considerable effort but have resulted in better-than-expected outcomes.
- Control and performance monitoring mechanisms have not been substantially altered because they have proven to be effective, whereas team coordination has been particularly challenging.
- Most companies are discussing plans to extend telework and most employees express a preference for continuing with regular telework in the future or at least would like the opportunity to request occasionally working from home.
- This would imply an extension of hybrid work arrangements, namely among medium-skilled employees performing information-processing tasks (such as clerks and other administrative and technical staff).
- 'On-demand' telework could become more prominent in jobs requiring high levels of social interaction.

Psychosocial risks

Recent systematic reviews of research on telework and health-related outcomes show that psychosocial risks are the most prevalent health risks associated with this work arrangement ⁽⁸⁾.

Most research in this field was carried out in a context in which telework was predominantly occasional and enabled for a limited number of employees, mostly in highly qualified occupations. Thus, the experience of extended and prolonged telework in the context of the pandemic calls for a reassessment of the traditional assumptions on telework, psychosocial risks and health ⁽⁹⁾.

Changes in job content

In line with other studies carried out during the COVID-19 crisis ⁽¹⁰⁾, fieldwork shows that mandatory telework has been particularly challenging for employees in jobs requiring high levels of social interaction and emotional demands.

This is the paradigmatic case of teachers and social workers, but also other jobs entailing some degree of face-to-face interaction that is difficult to replicate virtually without losing quality (for instance, commercial jobs).

The adaptation to telework entailed significant changes in the content and purpose of these jobs. In most cases, companies and employees were particularly ill-prepared for a sudden shift to telework and it often resulted in increased workload and stress, particularly in the initial stages of the pandemic. However, employees also reported persistent frustration related to poor results in their job or the sense that they were not performing 'at their best'.

For employees in jobs with such characteristics, keeping face-to-face interaction remains essential. However, most of these employees would not waive the opportunity to request occasionally working from home in a post-pandemic scenario. The experience of enforced telework has shown that some tasks can be performed remotely in a more comfortable and productive way.

⁽⁷⁾ Gibbs, M., Mengel, F. & Siemroth, C. (2021), *Work from home & productivity: Evidence from personnel & analytics data on IT professionals*. Becker Friedman Institute for Economics Working Paper, (2021-56). University of Chicago, Chicago, IL.

⁽⁸⁾ Oakman, J., Kinsman, N., Stuckey, R., Graham, M. & Weale, V. (2020), 'A rapid review of mental and physical health effects of working at home: how do we optimise health?' *BMC Public Health*, 20(1), 1825; Charalampous, M., Grant, C., Tramontano, C. & Michailidis, E. (2019), 'Systematically reviewing remote e-workers' well-being at work: a multidimensional approach'. *European Journal of Work and Organizational Psychology*, 28(1), 51-73.

⁽⁹⁾ Lopez-Izual, P. & Rodríguez Moroño, P. (2020), 'Who is teleworking and where from? Exploring the main determinants of telework in Europe'. *Sustainability*, 12(21), 1-15.

⁽¹⁰⁾ Fana, M., Milasi, S., Napierala, J., Fernández-Macias, E. & González Vázquez, I. (2020), *Telework, work organisation and job quality during the COVID-19 crisis. A qualitative study*. European Commission Joint Research Centre, Seville.

Work intensification

The extent of telework has often been identified in the research literature as informal overtime or working irregular hours to cope with a high workload or to manage the expectations of constant availability to attend to job requests, leading to stress and health-related problems ⁽¹¹⁾.

Fieldwork shows that increased workload and irregular working time patterns were mostly concentrated in the initial stages of the pandemic, due to the need to adapt work organisation practices to the new context. They were especially acute for employees with certain managerial responsibilities in companies that were severely affected by the crisis.

However, the findings also show that working from home entails clear risks of extending working time and increased difficulty in switching off from work, which are often associated with perceptions of having to be constantly available.

Reductions in commuting times have had different effects on working time patterns. Saving commuting time is perceived to be one of the most positive effects of telework; however, time previously spent commuting is often transformed (completely or partially) into working time. While some employees find it more rewarding to spend time working than commuting, others express difficulties in setting limits to their work when working from home.

Issues related to availability beyond regular hours result from different factors:

- Direct forms of intrusive control may lead to pressure to be constantly available, although they were mostly exceptional and limited to the initial stages of the pandemic.
- Other management practices (such as sending emails outside working hours) are more usual and may lead to implicit expectations of extended availability.
- Employees may feel compelled to be more visible and 'always on', to show responsiveness towards managers and co-workers.
- Expectations of extended availability may be more pronounced among employees in jobs involving high levels of social interaction, and who often experience difficulties in setting limits with clients (external or internal) or service users, than in other types of work.

Isolation and intense virtual team collaboration

Research has identified isolation as one of the main psychosocial risks of intense telework. Feelings of isolation have been prominent in the context of COVID-19 ⁽¹²⁾.

Increased attention needs to be paid to new psychosocial risks stemming from intense virtual team collaboration when most workers are working remotely. It is a critical issue with different implications for performance and psychosocial risks and may lead to:

- information overload from managing large amounts of information from multiple and overlapping digital tools that enable asynchronous and synchronous forms of communication ⁽¹³⁾;
- non-verbal overload: while face-to-face contextual information helps in framing and understanding the information, its loss requires an extra effort to achieve effective communication ⁽¹⁴⁾;

⁽¹¹⁾ Eurofound (2020). *Telework and ICT-based mobile work: flexible working in the digital age*. Publications Office of the European Union, Luxembourg; Mauroux, A. (2018), 'Quels liens entre les usages professionnels des outils numériques et les conditions de travail?', DARES analyses, No 29. Available at: <https://dares.travail-emploi.gouv.fr/sites/default/files/pdf/2018-029.pdf>; Arlinghaus, A. & Nachreiner, F. (2014), 'Health effects of supplemental work from home in the European Union'. *Chronobiology International*, 31(10), 1100-1107.

⁽¹²⁾ Carillo, K., Cachat-Rosset, G., Marsan, J., Saba, T. & Klarsfeld, A. (2021), 'Adjusting to epidemic-induced telework: empirical insights from teleworkers in France'. *European Journal of Information Systems*, 30(1), 69-88; Waizeneader, L., McKenna, B., Cai, W. & Bendz, T. (2020), 'An affordance perspective of team collaboration and enforced working from home during COVID-19'. *European Journal of Information Systems*, 29(4), 429-442; Perry, S. J., Rubino, C. & Hunter, E. M. (2018), 'Stress in remote work: two studies testing the demand-control-person model'. *European Journal of Work and Organizational Psychology*, 27(5), 577-593.

⁽¹³⁾ La Torre, G., Esposito, A., Sciarra, I. & Chiappetta, M. (2019), 'Definition, symptoms and risk of techno-stress: a systematic review'. *International Archives of Occupational and Environmental Health*, 92(1), 13-35.

⁽¹⁴⁾ Bailenson, J. N. (2021), 'Nonverbal overload: A theoretical argument for the causes of Zoom fatigue'. *Technology, Mind, and Behavior*, 2(1), 1-6.

- poor team collaboration and performance ⁽¹⁵⁾, particularly among those employees embedded in highly interdependent and iterative work processes who rely on frequent social interactions ⁽¹⁶⁾.

The fieldwork findings are in line with this strand of research:

- Team coordination is generally perceived as more time consuming and may entail an increased number of virtual meetings and information overload, slowing the pace of work and potentially affecting knowledge transfer within working teams and organisations.
- Intense virtual collaboration leads to a loss in the quality of interpersonal communication and the missing of non-verbal cues, which are crucial for contextualising information and avoiding misunderstandings. Furthermore, virtual meetings tend to be more job focused and leave no room for more informal exchanges. The main effects are feelings of isolation, fatigue (non-verbal overload) and insecurities about being misunderstood.
- Feelings of isolation have been particularly acute among employees in jobs involving high levels of social interaction and among new employees. In contrast, teleworkers in medium-skilled jobs who felt isolated before the pandemic perceived that they received increased recognition and support in the context of extended telework.

Work-life conflict

Recent research has given an account of the risk that the shift to telework may exacerbate existing gender inequalities in the distribution of care and household responsibilities, especially among dual-earning couples with children ⁽¹⁷⁾.

Individuals' ability to manage the boundaries between work and life domains according to their preferences might also have been fundamentally altered by mandatory telework, particularly for those lacking a suitable working space at home ⁽¹⁸⁾.

Fieldwork results show that work-life conflict was especially acute in the first stage of the COVID-19 crisis and was clearly gendered, affecting, most notably, working mothers with school-age children during school closures. In some cases, work-life conflict leads to anxiety and stress as a result of not being able to perform as usual. In other cases, it leads to feelings of guilt for being too focused on the job and not fulfilling care responsibilities.

Evidence gathered during lockdown and school closures in the early stages of the pandemic may not be generalisable, since most employees report having adapted to the new situation and the incidence of work-life conflict is moderated by other job characteristics and socioeconomic status.

Nevertheless, fieldwork shows that gendered patterns persist in relation to telework and work-life balance. Furthermore, the lack of a suitable space for working at home clearly exacerbates the risk of work-life conflict for both women and men.

Musculoskeletal disorders and other physical issues

There is growing evidence that the prevalence of MSDs increases due to prolonged sitting and static postures related to working long hours, as well as psychological stressors such as high workload ⁽¹⁹⁾.

⁽¹⁵⁾ Van der Lippe, T. & Lippényi, Z. (2020). 'Co-workers working from home and individual and team performance'. *New Technology, Work and Employment*, 35(1), 60-79.

⁽¹⁶⁾ Gibbs, M., Mengel, F. & Siemroth, C. (2021). *Work from home & productivity: Evidence from personnel & analytics data on IT professionals*. Becker Friedman Institute for Economics Working Paper, (2021-56). University of Chicago, Chicago, IL.: Golden, T. D. & Gaiendran, R. S. (2019). 'Unpacking the role of a telecommuter's job in their performance: examining job complexity, problem solving, interdependence, and social support'. *Journal of Business and Psychology*, 34(1), 55-69.

⁽¹⁷⁾ Blaskó, Z., Papadimitriou, E. & Manca, A. R. (2020). *How will the COVID-19 crisis affect existing gender divides in Europe*. JRC Science for Policy Report. Publications Office of the European Union, Luxembourg; Farré, L., Fawaz, Y., González, L. & Graves, J. (2020). *How the COVID-19 lockdown affected gender inequality in paid and unpaid work in Spain*, Discussion Papers Series, No 13434. IZA Institute of Labor Economics. Available at: <http://ftp.iza.org/dp13434.pdf>

⁽¹⁸⁾ Allen, T. D., Merlo, K., Lawrence, R. C., Slutskv, J. & Grav, C. E. (2021), 'Boundary management and work-nonwork balance while working from home'. *Applied Psychology*, 70(1), 60-84.

⁽¹⁹⁾ Roquelaure, Y. (2018). *Musculoskeletal disorders and psychosocial factors at work*. ETUI Research Paper — Report 142. Available at SSRN: <https://ssrn.com/abstract=3316143> or <http://dx.doi.org/10.2139/ssrn.3316143>; So, B. C., Chen, A. S. & Szeto, G. P. (2017), 'Cumulative IT use is associated with psychosocial stress factors and musculoskeletal symptoms'. *International Journal of Environmental Research and Public Health*, 14(12), 1541.

However, research on the incidence of MSDs has mainly focused on more general patterns of ICT work-related issues rather than home-based telework⁽²⁰⁾.

Despite limited research on the incidence of MSDs among home-based teleworkers, there are some indications suggesting that these risks may be on the rise. Fieldwork shows a high incidence of self-reported MSDs and other physical issues, which are associated with different causes:

- The incidence of MSDs is mostly reported in connection with increased sedentarism, poor ergonomic conditions at home and the experience of stressful working conditions or working longer hours.
- The most prevalent issue found in connection with increased sedentarism is a general sense of 'subjective fatigue'. In addition, it can aggravate previous physical issues and contribute to the emergence of new ones, such as weight gain, back and neck pain, and visual fatigue or eye strain.
- Space constraints faced by many employees prevent them from setting up a home workstation that complies with minimum ergonomic standards. These constraints are especially acute for employees who have to share their working room with other family members, namely partners also working from home and school-age children. Employees living in large cities are the most affected by insufficient space for teleworking.

Moderating factors

Research indicates that the effects of telework on working conditions and well-being is mediated by different factors. The intensity of telework is clearly crucial. Overall, research suggests that hybrid telework arrangements provide the best balance between remote work flexibility and face-to-face interaction with managers and co-workers⁽²¹⁾. Not surprisingly, fieldwork and other recent studies reflect a generalised preference for this kind of arrangement among both companies and employees. The results in relation to other relevant moderating factors are discussed below.

Autonomy

Telework is typically associated with enhanced perceived autonomy, which contributes to mitigating the perception of work overload and related stress⁽²²⁾. Various studies have also outlined the importance of acknowledging individuals' preferences and capabilities in coping with job demands and managing the boundaries between working and private life⁽²³⁾.

However, telework can lead to different outcomes depending on organisational norms and work organisation practices, which have an impact on the extent of autonomy granted to remote workers in organising working time schedules and tasks. In particular, autonomy is undermined when organisations expect employees to be available outside regular working hours⁽²⁴⁾.

In this context, the fieldwork identified three main patterns:

⁽²⁰⁾ Oakman, J., Kinsman, N., Stuckey, R., Graham, M. & Weale, V. (2020). 'A rapid review of mental and physical health effects of working at home: how do we optimise health?'. *BMC Public Health*, 20(1), 1825; Taib, M. F. M., Bahn, S. and Yun, M. H. (2016), 'The effect of psychosocial stress on muscle activity during computer work: comparative study between desktop computer and mobile computing products'. *Work*, 54(3), 543-555; Eickelhof, B. H. W., Huvsmans, M. A., Garza, J. B., Blatter, B. M., Van Dieën, J. H., Dennerlein, J. T. & Van Der Beek, A. J. (2013). 'The effects of workplace stressors on muscle activity in the neck-shoulder and forearm muscles during computer work: a systematic review and meta-analysis'. *European Journal of Applied Physiology*, 113(12), 2897-2912.

⁽²¹⁾ Contreras, F., Bavkal, E. & Abid, G. (2020). 'E-leadership and teleworking in times of COVID-19 and beyond: what we know and where do we go'. *Frontiers in Psychology*, 11, 3484.

⁽²²⁾ Gaiendran, R. & Harrison, D. (2007). 'The good, the bad, and the unknown about telecommuting: meta-analysis of psychological mediators and individual consequences'. *Journal of Applied Psychology*, 92(6), 1524-1541.

⁽²³⁾ Allen, T. D., Merlo, K., Lawrence, R. C., Slutsky, J. & Gray, C. E. (2021). 'Boundary management and work-nonwork balance while working from home'. *Applied Psychology*, 70(1), 60-84; Thörel, E., Pauls, N. & Göritz, A. S. (2020). 'Are the effects of work-related extended availability the same for everyone?'. *Journal of Work and Organizational Psychology*, 36(2), 147-156; Perry, S. J., Rubino, C. & Hunter, E. M. (2018). 'Stress in remote work: two studies testing the demand-control-person model'. *European Journal of Work and Organizational Psychology*, 27(5), 577-593.

⁽²⁴⁾ Büchler, N., ter Hoeven, C. L. & Van Zoonen, W. (2020). 'Understanding constant connectivity to work: how and for whom is constant connectivity related to employee well-being?'. *Information and Organization*, 30(3), 100302; Thulin, E., Vilhelmson, B. and Johansson, M. (2019). 'New telework, time pressure, and time use control in everyday life'. *Sustainability*, 11(11), 3067; Gadevne, N., Verbruggen, M., Delanoë, J. & De Cooman, R. (2018). 'All wired, all tired? Work-related ICT-use outside work hours and work-to-home conflict: the role of integration preference, integration norms and work demands'. *Journal of Vocational Behavior*, 107, 86-99.

1. Employees in highly demanding occupations with high levels of autonomy have not seen their working conditions fundamentally altered by working from home. These are mainly employees with management responsibilities who were already used to coping with high workloads and whose job functions involve being available to deal with job requests outside regular hours. This is consistent with the 'autonomy paradox' referred to in the literature ⁽²⁵⁾. Employees with high levels of work autonomy would internalise the requirements to cope with increased workload and being constantly available for reasons related to professional identity and recognition.
2. Employees with some degree of autonomy over their working time and organisation of tasks are those who more frequently report increased autonomy when working from home. Together with the time saved not having to commute to work, this has meant increased flexibility in organising their working time according to their preferences, including working irregular hours. In most cases, telework leads to positive effects in terms of self-perceived performance, job satisfaction and work-life balance. These findings are consistent with previous research ⁽²⁶⁾, stating that working beyond regular working hours is not associated with work-life conflict and stress, as long as it is the result of the employee's preferences.
3. Employees working to highly standardised work processes, with very limited autonomy over their working schedules and the pace of work, have not experienced major changes when working from home.

Control and organisational support

Most of the research on telework points to the need for adapting management and work organisation practices for the successful implementation of telework arrangements ⁽²⁷⁾.

In line with other studies mentioned above, fieldwork shows that the experience of telework during the COVID-19 crisis has had a significant impact on overcoming management distrust of and reluctance towards adopting telework. This is generally acknowledged by both employers and employees. Interestingly, both report that control and monitoring mechanisms have not changed substantially:

- According to employers, the main reason behind this is the effectiveness of existing control measures (management by objectives for jobs with high levels of autonomy and monitoring systems for more routine jobs). This suggests that extending telework to medium-skilled jobs has proven to be less challenging than anticipated by some studies ⁽²⁸⁾.
- Despite concerns about intrusive, direct control practices in the literature ⁽²⁹⁾, employees report that these were rather exceptional and occurred mainly at the beginning of the COVID-19 pandemic, gradually evolving towards a more positive, trust-based stance.

Fieldwork among employers also sheds light on some aspects of teleworking that have received less research attention. In most companies, the massive transition to telework led to some discussion of OSH risks and prevention measures. Although employers agree that the main risks to employees from telework are isolation and lack of proper working conditions at home, the companies' experiences differ widely in two important aspects:

1. Support for the adoption of telework during the pandemic has been mostly focused on the provision of laptops and software enabling remote work, although in some cases employees have had to use their own equipment. The provision of ergonomic equipment, and especially compensation for the additional costs associated with telework, have been more limited. Furthermore, it is worth stressing that risk assessments of home workstations were completely absent during the pandemic.

⁽²⁵⁾ Mazmanian, M., Orliowski, W. & Yates, J. (2016), 'The autonomy paradox: the implications of mobile email devices for knowledge professionals'. *Organization Science*, 24(5), 1337-1357.

⁽²⁶⁾ Jostell, D. & Hemlin, S. (2018), 'After hours teleworking and boundary management: effects on work-family conflict'. *Work*, 60(3), 475-483; Duxbury, L. & Halinski, M. (2014), 'When more is less: an examination of the relationship between hours in telework and role overload'. *Work*, 48(1), 91-103.

⁽²⁷⁾ Beauregard, T. A., Basile, K. A. & Canónico, E. (2019), 'Telework: outcomes and facilitators for employees', in Landers, R. N. (ed.), *The Cambridge Handbook of Technology and Employee Behaviour*, Cambridge University Press, Cambridge, UK, 511-543.

⁽²⁸⁾ Sostero, M., Milasi, S., Hurler, J., Fernández-Macías, E. & Bisello, M. (2020), *Teleworkability and the COVID-19 crisis: a new digital divide?* European Commission Joint Research Centre, Seville.

⁽²⁹⁾ Dolce, V., Vavre, E., Molino, M. & Ghislieri, C. (2020), 'Far away, so close? The role of destructive leadership in the job demands-resources and recovery model in emergency telework'. *Social Sciences*, 9(11), 19; Spagnoli, P., Molino, M., Molinaro, D., Giancaspro, M. L., Manuti, A. & Ghislieri, C. (2020), 'Workaholism and technostress during the COVID-19 emergency: the crucial role of the leaders on remote working'. *Frontiers in Psychology*, 11, 620310.

- Concerning psychosocial risks, only a few companies have developed comprehensive prevention policies, namely those with considerable experience of telework before the outbreak of the pandemic and those already planning to extend telework significantly. Among other aspects, they include setting availability limits, collecting systematic information on employees' well-being and training for line managers to adapt managerial and work organisation practices, including developing a deeper understanding of psychosocial risks. In this regard, setting clear limits on the use of ICT for work purposes appears to be a crucial. The right to disconnect was formally recognised in only one large company, while some human resource management practices were identified in others. However, issues related to expectations of availability beyond regular working schedules are far from resolved.

Social dialogue and collective bargaining at company level

Despite the extraordinary circumstances of the COVID-19 crisis, fieldwork suggests that social dialogue and collective bargaining has played a significant role in the regulation of telework when trade unions and workers' representatives are involved:

- Collective agreements have been instrumental in facilitating the transition to extended telework and regulating some key aspects, such as the jobs that are considered 'teleworkable', the intensity of telework, the rules for rotating between home-based work and on-site work and the provision of financial support.
- Small companies also provide some examples of consultation with workers' representatives or more direct participatory mechanisms.

Research on this topic is scarce, but existing evidence suggests that human resource management policies, mainly designed to enhance employee engagement and improve company performance, do not seem to be the most effective way to prevent psychosocial risks and negative health outcomes. Social dialogue and collective bargaining appear to provide better working conditions and a more transparent regulatory framework⁽³⁰⁾. This is especially relevant in the post-pandemic context, considering that telework will become an option available to a larger number of employees — many in medium-skilled jobs — than before the pandemic.

Regulatory trends at national level

The EU Framework Agreement on Telework (2002) is the main reference for national legislation and collective bargaining on telework in most EU Member States. This includes the definition of telework and the regulation of its core aspects: voluntary for both employees and employers; reversibility; equal employment, training and collective rights; data protection; respect for privacy; and employers' responsibility for OSH.

EU Member States regulate telework either through statutory legislation or by social dialogue and collective bargaining. In most countries, both types of regulation are used and they complement each other. The role played by the state or the social partners differs and partly depends on national industrial relations traditions.

Before the outbreak of COVID-19, most countries had statutory definitions and specific legislation on telework set up in their labour code or related legislation. In other countries (Denmark, Ireland, Cyprus, Latvia, Austria, Finland, Sweden) there was no statutory definition of telework, and issues related to telework were dealt with in different laws related to data protection, safety and health or working time.

Taking the EU Framework Agreement as a reference, the main innovative aspects regulated can be summarised as follows:

- Regular and occasional telework: the EU Framework Agreement covered only regular telework (at least 1 day per week). However, occasional telework has emerged as the predominant form of telework (meaning less than 20 % of working time and/or not following a specific pattern). National approaches vary. Some countries have changed the statutory definition of telework to encompass

⁽³⁰⁾ Sanz de Miquel, P. (2020). *Exploring the contribution of social dialogue and collective bargaining in the promotion of decent and productive virtual work*. DEEP VIEW Final report. VP/2017/004/0050. Available at: https://drive.google.com/file/d/1JrHgEDU9swF4KM5H74gOJ0-u_hptKlXK/view

any intensity while other countries have established different definitions and rules for regular and occasional telework.

- Right to disconnect: the EU Framework Agreement stated that teleworkers should manage the organisation of their working time under the limits of national legislation and collective bargaining. Expectations of constant availability by management or clients has led some countries to regulate the right to disconnect, which includes agreement on the distribution of working hours, breaks and limitations on availability.
- Right to telework: even if the voluntary principle is maintained, some countries have regulated the right to ask for telework (employees have the right to receive a written explanation in the case of a company's refusal) or to provide special treatment for some groups with a view to supporting work-life balance.
- Specific OSH provisions: in some countries, employers' duty to perform a risk assessment and inform workers of potential risks is explicitly mentioned in legislation. However, procedures for risk assessment differ and, in some countries, employers are severely constrained by the right to privacy (in such cases, the risk assessment is based on the information provided by the teleworker). The range of OSH risks addressed also vary. Some countries have developed regulation to assess and prevent specific psychosocial risks (namely isolation, work-life conflict and stress). Finally, employer liability for work accidents is a delicate area and national regulations in this regard vary considerably.

Since the outbreak of COVID-19, many countries have made efforts to increase awareness about OSH issues in relation to telework. Specific guides and resources have been developed, bearing in mind that many companies and teleworkers did not have previous experience of this work arrangement.

In most countries the experience of extensive and prolonged telework has fuelled changes in legislation and debates aimed at better adapting the regulation of telework in a post-pandemic scenario. By March 2021, five countries had implemented legal changes: Spain, Italy, Latvia, Luxembourg and Slovakia, while legislation was under review in many other countries (Belgium, Germany, Ireland, Croatia, Cyprus, Hungary, Malta, Netherlands, Austria, Poland, Portugal, Slovenia). Legal changes and policy debates on telework encompass four main aspects: (1) the statutory definition of telework (including the distinction between regular and occasional telework), (2) the right to disconnect, (3) the right to telework and (4) OSH provisions. They follow trends already in place before the pandemic. Issues related to equipment and compensation for the additional costs incurred by telework are also gaining relevance.

In contrast, the experience of telework during the pandemic has not led to legal changes in the Nordic countries. The implementation of occasional telework through individual and informal agreements has traditionally been based on self-regulation with no particular managerial constraints; instead it relies on trust between employers and employees (the so-called 'freedom with responsibility' approach). This approach appears to have been effective during the pandemic.

Policy pointers

In many EU countries changes in legislation, collective bargaining and debates show increased awareness of the potential risks of telework on the well-being and health of employees. The regulation of the right to disconnect, the prevention of psychosocial risks and the enforcement of OSH standards are relevant aspects. Yet, there are great differences across countries and there is no evidence of a common approach towards safe and healthy telework. A review of the 2002 EU Framework Agreement on Telework by the social partners would be a significant step forward.

The successful adoption of teleworking arrangements by companies requires increased efforts to adapt management and work organisation practices and improve OSH policies:

- Teleworking arrangements at company level should provide clear and transparent rules about the jobs and tasks that are teleworkable; procedures to request telework; equipment and costs; intensity and patterns of telework; disconnection and limits on availability beyond regular working hours.
- Line managers play a pivotal role in shaping the working conditions of teleworkers. Management should foster more trust-based relationships between line managers and employees, based on autonomy and supportive performance monitoring.
- Training for line managers may be required to adapt work organisation practices and foster a deeper understanding of psychosocial risks and related negative health outcomes.

- Management of working time is a key aspect. Line managers should play a major role in the enforcement of the right to disconnect, by setting clear rules regarding availability times and communication practices or job requests beyond regular working hours.
- The adaptation of work organisation practices should imply a clear distinction between tasks or work processes that can be accomplished on an asynchronous basis from those that require synchronous coordination or face-to-face interaction. This approach increases employees' autonomy over their working time.
- Management of virtual communication is also important to reduce the overload and stress frequently associated with multiple and overlapping digital channels. It also implies that there should be agreement on a suitable frequency and duration of virtual meetings and that some time should be set aside for informal exchanges and breaks between meetings.
- The most effective approach to prevent isolation is to limit the intensity of telework (e.g. to 50 % per week). Smooth virtual communication with line managers and colleagues mitigates isolation.
- The increased prevalence of MSDs and other physical issues (such as eye fatigue) highlights the relevance of ergonomics and healthy behaviours (e.g. breaks and physical activity) when working from home.
- OSH policies should start with a risk assessment of the home workstation in collaboration with the employee and guidance for complying with ergonomic standards. Provision of ergonomic equipment (office furniture and digital devices) is a relevant aspect.
- Comprehensive OSH prevention policies should involve employees in the identification and prevention of psychosocial and physical risks. This includes training, mechanisms to allow employees to express their concerns, and regularly collecting systematic information of workers' psychological and physical well-being.

On a final note, it is worth to stress that social dialogue and collective bargaining at company level should play a more relevant role in regulating telework arrangements. They provide a more transparent and participatory framework for regulating telework arrangements, fostering proactive prevention of psychosocial risks and enforcing compliance with OSH standards.

The European Agency for Safety and Health at Work (EU-OSHA) 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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