

Home-Based Telework and Presenteeism

New Lessons Learned From the Covid-19 Pandemic

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Objective: Previous research found increased sickness presenteeism (working despite sickness) associated with home-based telework. The Covid-19 pandemic offers new insights into mechanisms, as a large proportion of the workforce was forced to work from home, irrespective of organizational and individual predispositions. **Methods:** A path analysis based on survey data from a sample of teleworkers collected during the Covid-crisis was performed. **Results:** We found no general relationship between telework and sickness presenteeism. However, employees with telework experience before the pandemic use telework more often for work intensification which is associated with increased sickness presenteeism. As teleworking before the pandemic is associated with indirect work control (goal-directed management), indirect effects of such work organizations on presenteeism were confirmed. **Conclusion:** As hypothesized in prior research, indirect work control may increase self-endangering behavior which is amplified by telework.

Keywords: indirect work control, path analysis, self-endangering behavior, sickness presenteeism, telework

BACKGROUND

In previous research, an association between increased sickness presenteeism—defined as working despite an illness that would justify sick leave¹—and flexible working conditions including telework has been observed. A recent study, analyzing the European Working Conditions Survey data from the pre-COVID-19 era,² confirmed an association between telework and sickness presenteeism. The effect of telework on sickness presenteeism proved to be robust across 35 European countries and across a wide range of control variables. Similarly, a study³ reaffirmed the conclusion on the basis of the European Working Conditions Survey and case studies from various European countries that telework and ICT-based mobile work are related to increased incidence of sickness presenteeism. Previous studies indicated reduced levels of sick leave related to telework. This can be explained by the tendency of teleworkers to only rest for parts of a day in times of sickness or to return quickly to work after periods of sickness.⁴ The research presented in this paper aimed to gain deeper insight into the workings and mechanisms of this association with the help of survey data gathered from teleworkers during the Covid-19 pandemic.

Steidelmüller et al² proposed numerous possible reasons for the relation of telework and increased sickness presenteeism. As teleworkers have no need to travel between home and work, it may be

easier to work despite sickness, however with possibly reduced intensity. It may be harder to justify sickness absence as the effort to attend work due to omission of traveling is reduced. Additionally, illness may not be visible for colleagues and supervisors, hence the need to justify sickness presence becomes obsolete. Moreover, in the case of infectious diseases, there is no risk of contagion. However, when controlling for the free-time working of individuals, the authors observed a less pronounced relationship between telework and presenteeism leading to the speculation that telework-associated presenteeism may be grounded in self-endangering behavior.

Self-endangering behavior⁵ is seen as a specific facet of coping behavior associated with structural changes of the work organization. It appears where work control has changed from direct regulation of the workforce to goal-directed management styles such as management by objectives and application of performance measures (“indirect work control”⁶ or “post-Fordist work organization”⁷). Under this condition, the responsibility of success and productivity are shifted from the employer to the employees. Hence, direct control of workers’ engagement is replaced by goal-directed self-management of employees. Consequently, employees are not judged by motivation, engagement, or effort invested but instead by goal attainment and parameters of outcome measures. It is argued that employees react to such management strategies by prioritizing goal attainment at expense of self-exploitation and endangering individual health. Such prioritization is thought to manifest in longer working hours, work intensification, substance use but also sickness presenteeism, where workers try to continue goal attainment despite reduced workability and a need for recovery.^{5,8,9} Putnam et al¹⁰ argue that employees with flexible work arrangements are faced with “unobtrusive control,” as fixed deadlines and task expectations induce norms of high work intensity and overtime work.

Telework on the one hand could amplify self-endangering behavior, as employee work effort is less visible to colleagues and supervisors.^{11,12} Moreover, the research found indications that employees seem to trade extra effort in exchange for the provision of flexible work arrangements.^{4,13,14} Alternatively, telework can be seen as a consequence of indirect work control. Indirect work control can be seen as an enabler of flexible work arrangements because these management strategies require less attendance of workers.¹⁴ Moreover, it may be the case that the option of telework is a “strategic” offer to employees, where in return management expects work intensification and reduced absenteeism.¹⁵ Employees may be also forced to use telework to intensify efforts for goal attainment as a consequence of indirect control by investing additional work at home after office hours, on weekends, or days off or to maintain permanent accessibility. These observed associations have been denoted as the “autonomy paradox.”^{10,16} The underlying theory suggests that although beneficial effects of flexible work arrangements due to higher autonomy are expected, these arrangements contrarily lead to work intensification and self-exploitation.

Although job autonomy is conventionally seen as a positive salutogenic resource, high job autonomy—which could be expected for telework and indirect job-control—may turn from a positive resource to a demanding workplace characteristic. This assumption is backed by the inverted u-shaped relation between the level of job

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Clinical Significance: Indirect work control (such as management by objectives and application of performance measures) promotes the use of telework for work intensification (ie, teleworking after regular working hours in the main office or on weekends and times off) which is associated with enhanced sickness presenteeism.

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autonomy and sickness presenteeism observed by other research,¹⁷ where an increase in autonomy at low or moderate levels seems to reduce presenteeism, whereas higher levels of autonomy again increase presenteeism.

Research Question

During the Covid-19 pandemic, a huge proportion of employees were forced to shift their regular work from the main office to home-based telework. This special situation serves as a kind of real-world experiment as it can be expected that teleworking during the Covid-19 crisis is less confounded by specific personal, task-related, or organizational properties compared to the pre-Covid era. As, for example, teleworkers in the pre-Covid era were found to have higher morale and work motivation compared to non-teleworkers.¹² Moreover, as argued earlier, higher workload and specific management strategies may be associated with telework in the pre-Covid era. Hence, the Covid-19 crisis may serve as a kind of real-world experiment to analyze whether telework per se (ie, irrespective of confounders present before the pandemic) is associated with higher sickness presenteeism. We can compare the presenteeism behavior of teleworkers who already teleworked before the Covid-pandemic with those who had not. Additionally, we can compare teleworkers who work in organizations with a long history of telework before the Covid-era to those from organizations without such a history.

According to the arguments raised above, it is expected that teleworking before the Covid-19 pandemic and longer organizational teleworking traditions are linked to management strategies like indirect work control. It can be assumed that telework under such conditions is associated with work intensification such as longer working hours and the utilization of telework for additional work after regular office hours, weekends, and days off. It is expected that such types of teleworking, involving intensification as a consequence of indirect work control, will be associated with higher tendencies of workers to opt for presenteeism instead of sickness absence in times of sickness.

The conceptual model is shown in Figure 1. More specifically it is expected, that telework used for intensification is associated with a higher tendency for sickness presenteeism as a manifestation of self-endangering behavior. On the contrary, a regular shift of work done in the main office to home-based telework is not expected to increase sickness presenteeism.

H1: Telework that is used for intensification (ie, to work after regular hours in the main office, on weekends, and days off) and higher overtime hours are related to a higher tendency to opt for presenteeism in times of sickness.

Furthermore, management strategies such as indirect work control are expected drivers of intensified telework utilization.

H2: Indirect work control is related to telework that is used for intensification and a higher number of overtime working hours.

It is assumed that teleworking before the Covid-era was more frequently used for intensification as a consequence of indirect work control, whereas telework during the Covid-crisis was more often characterized by a shift of regular work usually done in the main office to home-based telework.

H3a: Telework experience before the Covid-era is positively related to telework that is used for intensification and a higher number of overtime working hours.

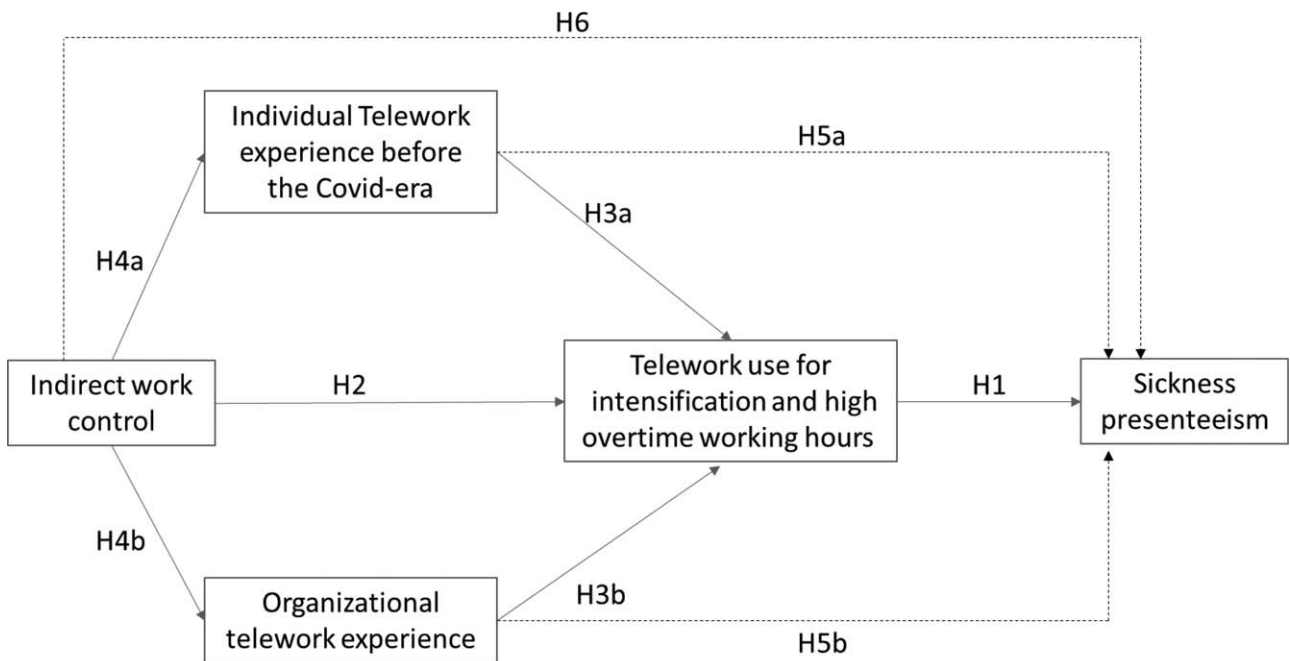
H3b: Longer organizational telework experience is positively related to telework that is used for intensification and a higher number of overtime working hours.

Next, management strategies such as indirect work control are expected drivers and facilitators of telework in the pre-covid era.

H4a: Indirect work control is positively related to telework experience before the Covid-era.

H4b: Indirect work control is positively related to longer organizational telework experience.

Consequently, it is expected that telework experience before the Covid-era and working in an organization with a longer telework tradition is indirectly related to a higher tendency for sickness presenteeism due to higher intensification.



Solid lines: assumed direct effects, dashed lines: assumed indirect effects

FIGURE 1. Conceptual model. Legend: Solid lines: assumed direct effects, dashed lines: assumed indirect effects.

H5a: Telework experience before the Covid-era is indirectly related to sickness presenteeism mediated by telework that is used for intensification and a higher number of overtime working hours.

H5b: Longer organizational telework experience is indirectly related to sickness presenteeism mediated by telework that is used for intensification and a higher number of overtime working hours.

Moreover, as telework and intensification are expected to be more prevalent under conditions of indirect work control, indirect positive effects of indirect work control on sickness presenteeism are expected.

H6: Indirect work control is indirectly positively related to sickness presenteeism.

METHODS

Participants and Procedure

The data for this study were collected between February and March 2021 via a mailed questionnaire that was sent to a random sample of 3000 employees drawn from the register of the Upper Austrian Chamber of Labour, which is the official organization representing employees interests. Membership in the Chamber of Labour is mandatory for most employees. The target population was restricted to employees working in three economic sectors (finance, insurance, and IT) in which home-based telework is widely possible and where the highest rates of home-based telework during the COVID crisis have been confirmed in Austria.¹⁸ Written informed consent was obtained from the participants. A total of 886 respondents who returned the questionnaire were considered for the analyses. Of those, 809 respondents reported telework experience during the past 12 months. Information on presenteeism propensity is available for 517 cases. This reduction is due to 229 respondents without health events during the past 12 months (ie, with a sum of sickness absence and sickness presence days of zero) and 63 with missing data regarding sickness absence and/or sickness presence days. These included 26 respondents who reported more than 60 days of sickness absence or sickness presence, which were excluded to avoid bias due to long-term sickness.¹⁹

Measures

Indirect work control was questioned through three items.²⁰ The items were “my work is based on targets set or target agreements,” “I regularly report whether I can keep up with agreed targets and deadlines,” and “My goal attainment status is evaluated in regular intervals,” followed with a Likert-type scale with four answer categories ranging from “does not apply” to “fully applies” (Cronbachs Alpha = 0.85).

Organizational telework experiences were captured by a single item: “did any employees in your organization already work from home before the COVID-19 crisis?,” followed with a Likert-

type scale with four answer categories (“never,” “seldom,” “sometimes,” “often”).

Information about **telework experience before the COVID-19 crisis** was measured by a question asking respondents who had telework experience during the past 12 months, whether they already worked in home-based telework before the pandemic “at least now and then.”

Telework use for intensification was covered by two items, asking about how home-based telework is used (“... at weekends or days off,” “... additionally after a regular workday in the main office”), followed with a Likert-type scale with four answer categories (“never,” “seldom,” “sometimes,” “often”). Inter-item correlation between both items is $r = 0.66$.

Overtime working hours were calculated as the difference between the reported number of weekly working hours as contracted and the reported real average working hours per week.

Presenteeism propensity was computed as the number of sickness presence days divided by the number of health events, whereby the number of health events is estimated by the sum of sickness presence and absence days.^{21,22} Presenteeism propensity estimates the probability that an individual chooses presenteeism over sickness absence in times of sickness. Contrary to raw measures of presenteeism prevalence or frequency, this measure focuses on the decision behavior between the presence and absence and is not confounded by the extent of sickness.²¹ Presenteeism propensity is only computable for individuals who faced sickness spells within the observation period. Therefore, the sample size for analyses regarding presenteeism propensity is reduced. This, however, is reasonable because decisions between sickness presence and sickness absence are only observable in individuals who faced health events. For sickness presence days, the question posed was “Approximately how many days did you work during the past 12 months even when your health state would have justified taking sick leave?.” Sickness absence days were covered by the following question: “Approximately how many days did you take sick leave during the past 12 months?” For both (sickness absence and sickness presence), responses of more than 60 days were excluded to avoid bias due to outliers and long-term sickness.^{19,23} Based on those with sickness experience during the past year, the mean reported a number of sickness absence days was 5.54 (SD = 8.16) and the mean reported a number of sickness presence days was 5.74 (SD = 7.11). The resulting mean presenteeism propensity was 0.53 (SD = 0.40). Hence, on average 53% of the total days with sickness was spent at work and 47% in sickness absence. Descriptive variable information is shown in Table 1.

Statistical Analysis

The assumed path model was estimated with a structural equation model with robust maximum likelihood estimation, with

TABLE 1. Descriptives and Zero-order Correlations

	Mean/proportion (SD)	(1)	(2)	(3)	(4)	(5)
(1) Indirect control	2.85 (0.86)					
(2) Organizational telework experience	2.45 (0.98)	0.10*				
(3) Telework before COVID crisis	34.6%	0.13**	0.38***			
(4) Telework use for intensification	1.85 (0.89)	0.20***	0.22***	0.31***		
(5) Overtime hours	3.63 (4.60)	0.08	0.05	0.08	0.33***	
(6) Presenteeism propensity	0.53 (0.40)	0.09*	-0.01	0.02	0.16***	0.18***

Mean/proportion: Mean response for rating scale variables and proportion for binary variables. SD, standard deviation. Pearsons correlation.

* $P < 0.05$.

** $P < 0.01$.

*** $P < 0.001$, $n = 517$.

standard errors that are robust to the non-normality and to the use of ordinal variables.²⁴

Root mean square error of approximation (RMSEA), standardized root mean squared residuals (SRMR), Tucker-Lewis Index (TLI), Comparative Fit Index (CFI), and the χ^2/df ratio are used to estimate the model fit. Following the recommendations of Hu and Bentler²⁵ and Schermelleh-Engel et al,²⁶ values of RMSEA ≤ 0.05 are indicative for good fit and values ≤ 0.08 indicate acceptable fit. Moreover, the lower bound of the 90% confidence interval (CI) of RMSEA should be smaller than 0.05. Values of SRMR should be ≤ 0.05 in case of good and ≤ 0.08 in case of acceptable fit. Values for TLI and CFI should be along the lines of 0.95 for acceptable fit. A small χ^2/df ratio is indicative of a good model fit and values between 2 and 3 suggest a good or acceptable fit.

Classical asymptotic methods and bias-corrected bootstrapping with 5000 bootstrap samples were used to test the significance of the indirect effects. Indirect effects are considered statistically significant if the 95% CI does not include 0. Analyses were computed with Mplus 8.4.²⁷

RESULTS

Sample Description

A 53.5% of the respondents were male. The age of respondents ranged from 19 to 64 years with a mean of 42.7 years (SD = 11.2). A 27.5% of respondents worked in the IT sector, 30.7% in the finance sector, 32.7% in the insurance sector, and 9.2 reported other sectors. A 35.4% reported secondary school as their highest educational level and 30.6% held a university degree. A 91.7% of the respondents worked from home at least once during the past 12 months. From those with telework experience, roughly one-third reported having already had telework experience before the COVID crisis. Presenteeism propensity of employees with and without telework experience during the past 12 months, as well as of those with and without telework experience before the pandemic was not significantly different. As apparent from Table 1, there was a weak significant association between indirect work control and presenteeism propensity, in that higher indirect work control was related to a higher presenteeism propensity. Moreover, presenteeism

propensity significantly increased with the reported number of overtime working hours and with a higher degree of telework used for intensification. Telework used for intensification was more prevalent among those who already had telework experience before the COVID crisis, among those who worked in organizations with higher telework experience, and among those under higher indirect work control.

Path Model

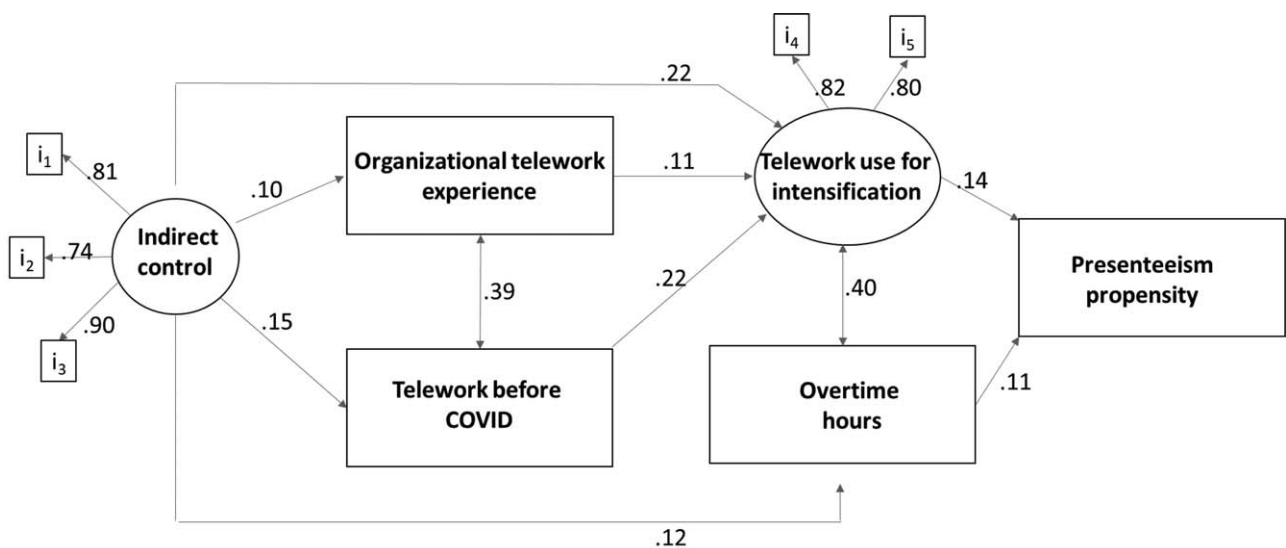
To test the assumed path model, the measurement model regarding both latent variables (indirect work control and telework use for intensification) was tested with a confirmatory factor analysis as the first step. The two-factor model showed excellent fit with $\chi^2 = 1.497$, $df = 4$ ($P = 0.827$), $\chi^2/df = 0.32$, CFI = TLI = 1.00, RMSEA = 0.00 (90% CI between 0.000 and 0.033), and SRMR = 0.005. All items showed significant standardized factor loadings in the range between 0.74 and 0.90 with respect to their assumed factor.

Secondly, the assumed path model was tested. Significant standardized path coefficients are shown in Figure 2.

The goodness-of-fit indices of the final model, where non-significant paths were omitted showed excellent fit with $\chi^2 = 29.730$, $df = 21$ ($P = 0.098$), $\chi^2/df = 1.416$, CFI = 0.995, TLI = 0.991, RMSEA = 0.022 (90% CI between 0.000 and 0.038), and SRMR = 0.022.

As seen in Figure 2, presenteeism propensity was directly positively associated with telework use for intensification and the number of overtime working hours, which was in accordance with hypothesis H1. The other variables considered in the path model only showed indirect effects. In accordance with hypotheses H3a and H3b, those with telework experience before the COVID crisis and employees working in organizations with more telework experience showed a higher tendency toward telework use for intensification. However, as both variables regarding telework experience before the Covid-crisis were not significantly related to overtime working hours, hypotheses H3a and H3b were only partially confirmed.

In accordance with hypothesis H2, a higher level of indirect work control was associated with a higher tendency for telework use for intensification and a higher number of overtime working hours.



Standardized coefficients $p < 0.05$

FIGURE 2. Path-model. Legend: Standardized coefficients $P < .05$.

TABLE 2. Indirect Effects on Presenteeism Propensity

Indirect path	Estimate	95%-Bias-corrected Confidence Interval		P value (asymptotic)
		Lower	Upper	
IC->OH->PP	0.015	0.003	0.037	0.067
IC->Tfi->PP	0.030	0.005	0.066	0.035
IC->Tbc->Tfi->PP	0.004	0.001	0.010	0.052
IC->Ote->Tfi->PP	0.001	0.000	0.005	0.115
Tbc->Tfi->PP	0.026	0.005	0.055	0.034
Ote->Tfi->PP	0.013	0.003	0.035	0.059

Estimate, standardized indirect effect through the indicated indirect path; Example, IC->OH->PP denotes the indirect effect of IC on PP through OH as mediator. IC, indirect control; OH, overtime hours; Ote, organizational telework experience; PP, presenteeism propensity; Tbc, telework before COVID; Tfi, telework use for intensification.

Indirect work control was positively related to individual and organizational telework experience before the Covid-crisis, which was in accordance with hypotheses H4a and H4b.

Statistical tests for the indirect effects in the final model are shown in Table 2.

Whereas all resulting indirect paths were confirmed significant based on bootstrapped confidence intervals, only two paths with the strongest indirect effects were confirmed significant based on the classical asymptotic estimation. Both these paths were via telework use for intensification. On the one hand, stronger indirect work control was associated with telework use for intensification which again was related to a higher presenteeism propensity, which is in accordance with hypothesis H6. On the other hand, those with previous telework experience before the COVID crisis tended to use telework more strongly for intensification which again was related to a higher presenteeism propensity, which is a partial confirmation for hypothesis H5a. With respect to hypothesis H5b, an indirect effect of organizational telework experience to presenteeism propensity through telework for intensification was confirmed using bootstrap methods but not using asymptotic standard errors.

DISCUSSION

As previous research^{2,3,12} found evidence for increased sickness presenteeism associated with telework, the research presented in this paper was aimed to gain deeper knowledge about possible pathways and mechanisms behind this association with survey data from teleworkers during the Covid-19 pandemic. The Covid-19 pandemic enables new insights in this respect, as a large proportion of employees were forced to shift their work from offices to home-based telework. Therefore, the pandemic serves as a kind of real-world experiment, because reduced confounding of telework with individual predispositions as well as task-related and organizational characteristics compared to the pre-Covid era can be assumed. The survey data were gathered from a random sample of employees from three economic sectors (finance, insurance, and IT), of which the vast majority worked from home during the past 12 months. Sickness presenteeism propensity (ie, the probability that an individual chooses presenteeism over absence in times of sickness) of those with and without telework experience in the past year was not significantly different. However, it was confirmed that employees who already had telework experience before the Covid-crisis and those who work in organizations with larger telework experience before the pandemic tend to use telework more often for work intensification (ie, use telework for additional work after regular office hours or at weekends or days off). Subsequently, those who used telework for work intensification showed a significantly higher presenteeism propensity. The corresponding indirect association between telework experience before the pandemic and presenteeism

propensity mediated by telework use for intensification was confirmed significant. Hence, it seems reasonable to conclude that employees in the pre-Covid era often used telework for intensification instead of simply shifting regular work from the main office to home-based telework. Associations between the extension of working hours and work intensification with sickness presenteeism were also found in previous research.²⁸⁻³⁰ Moreover, the presented results confirm the hypothesis that telework experience before the pandemic, longer telework experience of the organization, overtime working hours, and use of telework for intensification was related to a management strategy of indirect work control. Hence, in accordance with the framework of self-endangering behavior, it can be concluded that indirect work control encourages employees to increase their efforts, including the additional use of telework for work intensification, working overtime, and working despite sickness to ensure goal-attainment.

In sum, the present results suggest that home-based telework is not associated with increased sickness presenteeism per se. Instead, it can be concluded that the association between telework and sickness presenteeism as well as work intensification found in previous research is—at least partially—grounded in new ways of work organization such as indirect control. It can be suggested that employees in the pre-Covid era predominately used telework to intensify and expand working hours after regular office hours and in their free time. Subsequently, such type of telework used for work intensification is associated with increased sickness presenteeism as has already been found in previous research.

In the case of study research,³ it has been reported that employees seem to value flexible work arrangements because it enables them to continue working despite feeling unwell and hence, it was concluded that presenteeism seems to be an employee choice. Based on the same study, however, it has been concluded that this is mainly driven by a high workload.

As noted by Evans et al.,³¹ a fundamental difference between traditional and new managerial strategies is that the former act primarily through coercive and remunerative mechanisms to ensure productivity and compliance, whereas the latter uses subtle ways of normative control, where employees internalize norms of boundaryless work. Hence, indirect work control seems to enable work intensification and sickness presenteeism by providing flexible work arrangements and internalized motivation for goal attainment.

Some authors argue that research on sickness presenteeism is primarily concerned with the negative consequences of this behavior, while ignoring possible benefits. For example, Karanika-Murray and Biron³² argue that presenteeism may be “functional” for employees in those arrangements such as telework enable the maintenance of performance and help to ensure career opportunities despite sickness. Similarly, other research²³ confirmed that positive

individual evaluations of sickness presenteeism (eg, that presenteeism behavior is evaluated positively for economic prosperity regarding their organization and the society as a whole) significantly predict a higher presenteeism propensity. While it may be the case that individuals evaluate opportunities for presenteeism in a positive way, previous longitudinal research confirmed evidence for sickness presenteeism as a risk factor for future impairment of general health, increased mental-, and physical-health problems, emotional exhaustion, coronary health events, and increased sickness absence rates.^{33–39} Hence, in line with the concept of self-endangering behavior, indirect work control seems to stimulate autonomously motivated presenteeism³² to prioritize work-related goal attainment at the cost of future health impairments.

The results presented in this study provide new insights into mechanisms and pathways behind increased sickness presenteeism associated with telework. There are however some limitations of the study to be mentioned. The proposed path model assumes causal directions and mediating pathways between the study variables. However, due to the cross-sectional design, it was not possible to analyze the causal directions of these associations. Therefore, it cannot be ruled out, for instance, that the causal direction between presenteeism propensity and telework is reversed. Future research may apply prospective research or diary studies to analyze causal pathways more deeply. Moreover, the study variables were based on self-reported measures. Especially, self-reports of sickness absence and sickness presence have been criticized regarding possible recall- and social desirability bias, although the same measures used in the actual research are also frequently used in other research on presenteeism.²² Sickness presenteeism is only subjectively accessible, but other research⁴⁰ confirmed a high agreement between annual self-reported and register-based numbers of sickness absence days and comparable correlations with health indicators, suggesting sufficient measurement quality of self-reports. Next, organizational telework experience was measured with a single item, asking how often employees of the organization teleworked before the pandemic. We believe that respondents generalize their estimated frequency to the entire organizational staff. However, as we only asked for the frequency and not the number of teleworkers, we cannot rule out for instance whether some respondents may have chosen “often” in cases where only a small proportion of the workforce worked from home. Furthermore, although our analyses were based on a random sample of employees, the target population was restricted to three economic sectors (finance, insurance, and IT) with typically high rates of telework and high educational levels. Hence, the generalizability of our results to other sectors remains unclear. Moreover, although our analyses are based on fairly large sample size, the response rate was about 30% which limits our results due to possible non-response bias.

Despite these limitations mentioned, our study results suggest that elevated sickness presenteeism of teleworkers is attributable to indirect work control, which stimulates the use of telework for intensification. Moreover, our results suggest that increased sickness presenteeism is not necessarily related to telework per se but a consequence of indirect work control. Telework is likely to increase after the Covid-pandemic and may offer diverse advantages for workers and the organization (such as reduced travel time, better work-life balance, and higher resources such as autonomy and reduced interruptions). However, it is recommended that organizations should make efforts to avoid a possible increase in self-endangering behavior. It may be reasonable, for example, to encourage employees to shift a limited number of whole regular workdays to home-based telework to avoid that telework is used for additional work after a regular workday. Furthermore, as already recommended by others,⁴¹ written telework policies regarding sick leave, working hours, and connectivity should be implemented. Moreover,

as working from home is associated with reduced visibility of efforts to others and limited opportunities for social interaction, the risk of self-endangering behavior related to indirect work control may be amplified by telework. Hence, it seems important to establish a managerial culture as well as technical equipment to maintain visibility and feedback and to facilitate recognition of workers' engagement, irrespective of performance measures. Such measures to improve interaction and feedback may also enhance the visibility of sickness to others, which can reduce the need for justifying sickness absence. Further, due to the generally higher risk of self-endangering behavior under conditions of indirect work control, such managerial strategies should at least be accompanied by the establishment of a psycho-social safety climate where the management pays close attention to health risks and issues of health promotion, which has been found to reduce sickness presenteeism.⁴²

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