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“To work, or not to work, that is the question” – Recent trends and avenues for research on presenteeism

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Abstract:

This position paper brings together developments in the field of presenteeism, which is needed due to persisting conceptual and methodological challenges as well as the increased research in the field. Initiated during an EAWOP Small Group Meeting¹, the paper focusses on: (1) ‘Concept’, (2) ‘Measurement and methodological issues’, and (3) ‘Context’.

First, due to the variety of existing definitions, competing understandings, as well as the notion of positive presenteeism, will be discussed. Second, the measurement of the act of presenteeism, and the productivity loss associated with presenteeism will be reflected. Third, following the call to investigate presenteeism in specific contexts, social, occupational, cross-cultural aspects, as well as the contemporary workplace-changes will be explained. Based on this, we identify recommendations for research on presenteeism.

Keywords:

presenteeism, absenteeism, measurement, context

¹ This position paper is developed from the contributions to the EAWOP Small Group Meeting on ““To work, or not to work (when sick), that is the question” – Recent trends and avenues for research on presenteeism and absenteeism”, that took place at the University of Klagenfurt, 27-28 July 2018. The meeting was supported by the EAWOP, the Austrian Research Association, the University of Klagenfurt, as well as the Friends of the Faculty of Management and Economics.

Introduction

Maintaining both physical and psychological health of employees has become vital for organizations, as the individual workers constitute one of the most important resources of organizations (Pfeffer, 2010). However, as humans are prone to health incidents, organizations need to deal with the reality of interruptions of a fully productive regular attendance at work (Johns, 2010). While health incidents often result in sickness absenteeism, i.e. the failure to turn up for work as scheduled (Johns, 2008), there is growing evidence that workers increasingly opt for another alternative: presenteeism, defined as attending work while ill (Johns, 2010; Karanika-Murray & Cooper, 2018).

While it can obviously be problematic for the individual, as it might generate a deterioration of health, presenteeism also creates costs for organizations and the society (Evans-Lacko & Knapp, 2016; Miraglia & Kinman, 2017). At first glance, presenteeism might sound like a reasonable deal for organizations: They avoid costs associated with the unplanned absence, such as the cost for replacement. However, data has cumulated that this calculation might be wrong, as there is evidence that employees who go to work ill tend to make errors more frequently (Niven & Ciborowska, 2015) and report lower levels of performance and productivity (Robertson & Cooper, 2011). Yet, organizations emphasize the possible adverse consequences of absenteeism and induce employees to opt for presenteeism (Miraglia & Johns, 2016). Then again, consequences of presenteeism might be intricate and there might be situations in which presenteeism works therapeutically (Karanika-Murray & Biron, 2019).

Thus, presenteeism has important consequences for organisations and individuals yet still poorly understood, which is also shown in the increases in research on presenteeism in different disciplines (Johns, 2010; Lohaus & Habermann, 2019; Cooper & Lu, 2018). Consequently, research stems from different fields and ideas, from work and organizational psychology, human resource management, to health sciences, such as occupational health

psychology and epidemiology, or even economics. While these disciplines provide us with different aspects of interest, assumptions, and approaches that add value to research on presenteeism, it is important to find common ground and reflect on where the field stands, what the current challenges are, and how we might cope with those challenges.

Drawing on this multidisciplinary perspective, this paper brings together scholars from different disciplines and countries, in order to gain a more unified and comprehensive understanding of presenteeism and to provide guidance for further advancements of the field. The paper explores conceptual as well as methodological advances and highlights directions for future research, suggesting a fruitful approach and offering a research agenda to follow.

Based on the increase in research, we identify three important themes that provide a framework to tackle those challenges. First, we explore and evaluate the *concept of presenteeism* and how differently it is understood. While this has been done previously (Johns, 2010; Halbesleben et al., 2014; Lohaus & Habermann, 2019; Karanika-Murray & Biron, 2019) we will discuss the benefits of a clear definition, why and how it might be extended, and how we can address ideas such as a functional presenteeism and the individual experiences of presenteeism. Second, we discuss the *measurement of presenteeism* and related methodological issues by reflecting on the existing approaches in order to guide future research in terms of how to decide which pros and cons need to be considered when choosing a specific approach, both measuring the act of presenteeism as well as for measuring and valuing productivity loss attributable to presenteeism. Third, based on the evidence of its importance, we discuss the *role of context*, identifying important aspects that have been neglected so far in presenteeism research, but that might nevertheless have a strong influence on presenteeism. These recommendations are summarised in Table 1. Finally, we provide a brief conclusion consolidating the manifold ideas of the position paper.

Table 1 around here

(A) Concept

To date, there is no uniform and generally accepted definition of presenteeism, as three main lines of understanding have developed independently and are used in parallel. The distinctions between different definitions are relevant because they have consequences for the measurement of presenteeism, the choice of study designs, and the kind of intervention strategies to deal with presenteeism.

(1) Definitions of presenteeism

First, in the mainly European line of research, employed by most organizational scholars (Johns, 2010), studies on presenteeism investigate the act of attending work while ill, aiming at understanding the antecedents and consequences of presenteeism or the motives for this behaviour. Research focussing on antecedents and consequences strives at identifying factors relating to the individual, and the context implying the work setting, the organization, and the environment, that are associated with presenteeism (for an overview see Lohaus & Habermann, 2019; Miraglia & Johns, 2016; Karanika-Murray & Cooper, 2018). Studies investigating motives for presenteeism reported that colleagues, financial reasons, and worries to be laid off were relevant aspects (e.g., Baker-McClearn et al., 2010; Johansen et al., 2014; Johansen, 2018; Kim et al., 2016; Krane et al., 2014; Lu et al., 2013; Navarro et al., 2018).

This line of research is characterized by the conceptualization of the act of presenteeism as the outcome of a complex decision-making process by the ill person to either attend work or stay at home. However, this decision process is influenced by environmental (cultural, organizational, and task-related) conditions and refrains from ascribing motives or consequences to the act of presenteeism, and thus does not confuse causes and effects (Johns, 2010; Karanika-Murray & Cooper, 2018). Further, this definition does not obscure the possible positive effects of presenteeism that are often neglected (Lohaus & Habermann, 2019). A growing number of researchers stress the occurrence of positive impacts of presenteeism at least

in certain cases of illness (e.g., Demerouti et al., 2009; Karanika-Murray & Biron, 2019; Steinke & Badura, 2011), which is discussed in the next section of this paper (Section 2). Further, this definition of presenteeism has some overlap with the concept of *leaveism* (Hesketh & Cooper, 2014), which utilizes allocated time off, such as annual leave days or flexi hours banked when feeling unwell, instead of engaging in either absenteeism or presenteeism.

The second line of research, which has mainly been developed in North America (Johns, 2010), defines presenteeism as the measurable loss of work productivity due to an individual's health problems (e.g., Burton et al., 2014; Collins et al., 2005; Goetzel et al., 2009; Zhou et al., 2016). Within this line, two key aspects of interest are discernible: the measurement of productivity loss and health-related interventions to reduce it. In this definition, health problems include acute minor (e.g., common cold), periodic (e.g., migraine headaches), and chronic illnesses (e.g., diabetes) as well as health-damaging or health-threatening behaviour (e.g., smoking). This line of research focuses on the impact of the individuals' health condition on their productivity and the financial loss for the organization. The standard of comparison for performance impairments is the healthy and thus fully productive worker. Research efforts concentrate on the measurement of reductions in productivity (e.g., Koopman et al., 2002; Lerner et al., 2001; Lofland et al., 2004; Mattke et al., 2007; Ospina et al., 2015; Shikiar et al., 2004) and the calculation of the monetary cost incurred (e.g., Goetzel et al., 2004; Iverson et al., 2010; Kessler et al., 2004; Pauly et al., 2008; Schmid et al., 2017; Schultz et al., 2009; Strömberg et al., 2017), which will be discussed later (see Section 5). Health-related interventions constitute another field of interest and are useful in reducing health-related productivity loss (e.g., Ammendolia et al., 2016; Block et al., 2008; Brown et al., 2011; Burton et al., 2006; Cancelliere et al., 2011).

This line of research has fuelled the interest in presenteeism for practitioners, as it ascribes costs to work being attended with a health impairment (Böckerman, 2018). Critics of

this approach argue that it defines presenteeism solely by its (negative) consequences (Johns, 2010). Further, several scholars argue that this understanding ignores the fact that not every health problem necessarily entails productivity losses (e.g., Vingård et al., 2004) or negative effects on the future health and workability of the individual (e.g., Steinke & Badura, 2011). However, both views have in common that they conceptualize presenteeism as a health-related phenomenon. In order to clarify this position, some researchers use the term sickness presenteeism (e.g., Bergström et al., 2009b; Hansen & Andersen, 2008; Johansen et al., 2014; Navarro et al., 2018). As a result, presenteeism has a rather negative connotation and is seen as a phenomenon that should be brought under control.

A third line of research attempts to broaden the scope of presenteeism research, as the literature on presenteeism has been largely influenced by the definition of “coming to work while ill”. However, this definition is confined to one aspect of why an individual may not fully engage in work, the illness. For example, Gilbreath & Karimi (2012) used the term presenteeism to describe not being able to muster cognitive energies at work due to stress, thus limiting presenteeism to being stress-related. Cooper defined presenteeism as “being physically present but functionally absent” (Cooper, 1996), which is not strictly confined to illness. In other words, dysfunctional presence at work may be due to reasons that are unrelated to health. While such approaches do extend the meaning of presenteeism, they are still confined to productivity loss. However, it is not necessary that indulging in non-task-related activities at work would always result in productivity loss, which is discussed in detail in the next section.

In essence, this stream of research suggests that the definition of presenteeism needs to be broader to accommodate both productivity loss and potential productivity gain as well as non-illness-related reasons. An advantage of this line of reasoning is that it establishes a parallel to the definition of absenteeism, in which researchers make a distinction between health-related absence from work (sickness absenteeism) and absence due to other reasons (sometimes termed

voluntary absenteeism, e.g. Halbesleben et al., 2014). It enables grasping the behaviour of someone at work who is neither ill nor working, thus opening up inquiries such as what that person might be doing and what consequences this has for the organization. However, including reasons unrelated to sickness in the definition of presenteeism makes this notion more general at the expense of its current focus.

In view of these different streams of research, and the broader increase of research in the field of presenteeism, we argue that efforts in the clarification of the definition to achieve a common understanding of the phenomenon are necessary. A consistent understanding of presenteeism would indisputably entail substantial advantages for research and practice likewise. First, it is a necessary condition for the development of reliable and valid measurement methods (see Sections 4 and 5). Second, it would allow for the unambiguous interpretation and comparative analysis of research results gained in different contexts and by various research designs. Third, it would be a basis for the deduction of useful recommendations for intervention strategies to manage the phenomenon (see Section 7).

Thus, we propose that research on presenteeism should recognize the basic understanding of presenteeism as **behaviour of working in the state of ill-health**, which can include sickness as well as mental disorders. It should refrain from evaluating and labeling the behaviour in itself as positive or negative. Further, the definition should not imply any motives or consequences (such as productivity loss or future health impairments). Additionally, such a definition can be applied to any kind of work. It should be based on the understanding of work not only including employed and self-employed work, but also taking into account work that is not formally remunerated, such as housekeeping and volunteer work. It should further include other work-like activities that do not immediately serve one's livelihood but are a person's main occupation, such as studying at school or university (e.g., Johansen, 2018). In addition, previous research that defines presenteeism using other aspects (such as productivity loss) has its

legitimization and benefits, but we argue that separating causes (e.g. specific sickness) and consequences (e.g. changes in productivity) will help to better understand the phenomena in general. Consequently, we propose to follow the idea that productivity loss associated with working while ill is not to be regarded as presenteeism, but rather productivity changes attributable to presenteeism (Johns, 2010; Karanika-Murray & Cooper, 2018).

Moreover, research has to take into consideration that sickness is a non-dichotomous state. One end of the continuum is characterized by complete health with the individual feeling well and not perceiving any symptoms of illness. The other end is marked by manifest sickness or disease that is accompanied by severe subjective health impairments and that indubitably requires professional medical treatment. It also has to acknowledge that the degree of illness that triggers presenteeism or absenteeism mainly depends on the individual's status, which is why we use the more inclusive term "ill-health".

(2) Functional consequences of presenteeism

As mentioned above, attention to potentially positive consequences of presenteeism is still scarce in the presenteeism literature, which is why we focus on the possible functional consequences in this section. The tendency to view presenteeism as negative has precluded these lines of investigation thus far. However, limited productivity may be better than no productivity, attendance in the face of illness might be therapeutic, and some presentees might be seen as exhibiting organizational citizenship behaviour (OCB) (Karanika-Murray & Biron, 2019). It is important, therefore, that presenteeism is not viewed as an either positive or negative phenomenon (Karanika-Murray et al., 2015; Miraglia & Johns, 2016; Karanika-Murray & Cooper, 2018; Karanika-Murray & Biron, 2019), but rather as a trigger for a range of outcomes which have the potential to be negative or positive. Problematic outcomes do not arise automatically from attending work when unwell, but from doing so without appropriate management or adjustments being made to the work tasks, environment, or equipment, to

ensure that the effect on the person's health is restorative rather than detrimental. Thus, the focus should not be on preventing presenteeism as such, but on ensuring that attending work is the most appropriate course of action considering both the health condition and the nature of the work (Whysall et al., 2018).

A growing body of literature (e.g., Biron & Saksvik, 2009; Demerouti et al., 2009; Karanika-Murray & Biron, 2019) has already provided initial insights into positive consequences of presenteeism for both the individual and the organization. Work is good for health and wellbeing (Waddell & Burton, 2006). As highlighted by Karanika-Murray & Biron (2019) work is meaningful in several ways: it can help to fulfill basic psychological needs (van den Broeck et al., 2016), and relatively few health conditions are debilitating enough to preclude any engagement with work, whereas work can support recovery from ill-health (Halonen et al., 2016). Knani et al. (2018) highlight that a family-like work-environment helped employees with an illness overcome isolation and distracted them from their health impairment. Abstaining from work during the full course of ill health is not always advisable, and consequently, misconceptions of presenteeism as a solely negative behaviour entail the risk of mismanaged work, under-utilised capabilities, and attendance pressures (e.g., punitive attendance policies) that can impede gradual recovery and return to work. Therefore, if managed correctly and supported with adequate resources, attending work during illness has the potential to benefit health and performance. According to Biron & Saksvik (2009), presenteeism can help to preserve the quality of working relationships, sustain job control as workers adjust their workload and tasks to their health impairment. However, this might be a function of the specific health condition.

As acknowledged by Baker-McClearn et al. (2010) and Whysall et al. (2018), early rehabilitation inevitably involves a degree of presenteeism, yet is known to be beneficial to both organisations and employees alike. Dew, Keefe, and Small (2005), for example, found that some nurses metaphorically termed their workplace a 'sanctuary', described their teams

as ‘family’, and claimed that with the support of their co-workers they worked through mild sickness and eventually felt better or ignored discomfort altogether.

Thus, employers should acknowledge that some measure of presenteeism is beneficial to both employees and organizations, so long as it is well managed. Such constructive presence—as proposed by Kaiser (2018)—is achieved when both trust and climate strength are high within an organization. In such an environment, employees will be strongly committed to both the organization and its goals and will meet their responsibility towards other members of the workgroup as well.

Additionally, research states that the consequences of presenteeism can be positive if adequate resources support some degree of flexibility and adjustment to work tasks, depending on the employee’s health status. Karanika-Murray & Biron (2019) describe presenteeism as functional engaging with work when individuals opt for presenteeism without taxing their health. In such circumstances, presenteeism is considered sustainable—in terms of the balance between performance efforts and health—when individuals who go to work despite being ill act in agreement with their preferred regulatory focus of preventing losses or promoting gains in terms of their health and performance (Brockner & Higgins, 2001). By doing so, employees might be able to achieve some levels of performance and recovery simultaneously.

For example, one such relationship might be between presenteeism and work-anxieties. Workplaces may contain a variety of anxiety-provoking characteristics, such as rivalries between colleagues, controlling by supervisors, demands for achievement, environmental dangers, and uncertainty concerning future developments (Muschalla, 2016). If work-related anxieties manifest themselves, they can result in presenteeism with observable work capacity problems, absenteeism, or even long-term sick leave or disability pension. Mental disorders impact the ability to work and are often associated with

absenteeism (Ekberg et al., 2015) or presenteeism (Esposito et al., 2007). Empirically, work-related anxieties have been found to be especially risky, resulting in the impairment of working ability and sick leave (Muschalla, 2016; Muschalla & Linden, 2009). However, healing the symptoms and the mental illness itself is often not a primary aim because mental disorders are chronic health problems. Thus, improving the capacity status of a person and compensation of the impairment by work adjustment is a more fruitful way (Baron & Linden, 2009). Preventive action at work may be done by designing “minimally anxiety-triggering workplaces”, assigning tasks to employees which fit their capacity levels, and offering psychosomatic counselling by the occupational physician (Rothermund et al., 2016). The evaluated concept of work-related anxieties (Muschalla, 2016) can be useful for mental-health-oriented work analysis and job designs for employees with different psychological constitutions and capacity levels.

Further, presenteeism might be acknowledged as a type of OCB and the literature has provided first arguments for the relationship between presenteeism and OCB (Demerouti et al., 2009; Johns, 2010). Displaying citizenship behaviours at work regardless of having health problems can be considered as taking on an extraordinary role—beyond regular job-related behaviours—when employees are not feeling healthy. For example, individuals who show reluctance to take sick leave might be considered as exhibiting altruism and courtesy toward others. Still, according to Miraglia & Johns (2016) “more research is needed to understand when going to work while ill can represent a sustainable choice, as in the case of a gradual recovery from long-term sickness, a self-affirming choice in the face of chronic illness, or being an example of citizenship behavior”.

Overall, we propose that the optimal management and rehabilitation path will vary drastically depending on the health condition. Therefore, future research into the patterns of presenteeism and absenteeism adopted by individuals is important for developing an

understanding of the extent to which this is likely to be a long and short-term functional or dysfunctional behaviour. This is a necessary step to identify beneficial interventions as well as adequate management strategies.

(3) Considering the function of presenteeism for the individual

So far, presenteeism has been studied primarily in order to further our understanding of the antecedents and consequences of the phenomena. Although this approach has been beneficial for understanding the factors that drive presenteeism, it has also promoted a relatively narrow view by neglecting the person and individual processes behind presenteeism and implies that all presentees are a homogenous group (Karanika-Murray & Biron, 2019). In this section, we build on the principle that behaviour is a function of the person and the environment (field theory, see Lewin, 1939). We discuss how a renewed focus on the function presenteeism serves for the person is needed and can be beneficial for understanding variation in outcomes, the context, and the dynamic nature of presenteeism.

Focusing on the function of presenteeism for individuals allows to ask questions about how and why the individual enacts presenteeism at a particular time and in a specific context. It also implies an understanding of the meaning and affect that surround it. Lewin's field theory (1943) suggests that in order to "predict and begin to change a person's behaviour, it is necessary to take into account everything about the person and his/her perceptual or psychological environment in order to construct the person's life space" (Burnes & Cooke, 2013, p. 412). This life space includes perceptions (conscious or not) forces in one's life at work, at home, and in their other activities. As argued by Burnes & Cooke (2013), in order to bring about behavioural change and eventually organizational interventions to better manage presenteeism, there is a need to move away from a simplistic mechanical-behaviourist approach and closer to a complex social system perspective.

In line with the suggestion to investigate presenteeism with a focus on its function, we argue for a more dynamic approach and process view of presenteeism, as it offers a more holistic understanding of the experience or behaviour (Halbesleben et al., 2014). Such understanding of the phenomenon of presenteeism should not just facilitate a method of research; it is more broadly about the principles of inquiry, from conceptualization, to method, to analysis, and — consequently — to practice. Presenteeism is to some extent intentional and pre-meditated, and grounded in a decision-making process (Karanika-Murray et al., 2015, and see Section 1). Focusing on this process can help to answer questions around the patterns of the behaviour as well as the values and costs of the behaviour for the individual, such as the emerging evidence on the adaptive function of presenteeism (Karanika-Murray & Biron, 2019; and see Section 2). A focus on the adaptive function also means that presenteeism behaviour varies with internal and external conditions. The decision-making process is occurring within a complex and intricate network of forces between organizational policies (e.g. on sickness absence), informal and formal group norms of the workplace, leadership style, characteristics of the psychosocial work environment, and individuals' capacity and propensity to make use of the resources available to balance the performance demands at work, and their health ailment. In essence, we suggest that putting the individual at the centre of attention recognizes that the function of presenteeism is specific to this individual and to some extent dynamic in nature (Karanika-Murray & Biron, 2019).

Considering presentees in terms of the range of characteristics that they share and the differences among them implies that we focus on groups of individuals and their access to and use of resources in their workplace (Hobfoll, 2001). It also implies that workers are not static in one type but can move from one type of presenteeism to a different type that would allow a better equilibrium between the health limits and performance demands (Karanika-Murray & Biron, 2019), or, even better, promote full recovery from the health situation (Howard et al.,

2009). In order to grasp these variations in health and in performance, research designs that focus on the person and the process can detect trajectories between types of presenteeism, especially if they take a longitudinal approach. Further, they help to broaden the understanding of what it means to be present at work in order to include varying work contexts, such as occupations or sectors (Section 8). Such focus that takes into account the nuances of individual experiences, the dynamic nature of presenteeism, and its potential positive consequences for the individual opens new avenues for both research and practice.

Therefore, we propose that research with a broader and more complete understanding of the process and pattern of human development (Laursen & Hoff, 2006) is especially beneficial and needed for understanding presenteeism. This could be done by using qualitative or quantitative methods that allow to understand processes and dynamics of a behaviour. For example, longitudinal or diary studies to capture individual experiences, specific decision-making processes, or trajectories between types of presenteeism, and adaptive processes for the respective subgroups (Karanika-Murray & Biron, 2019).

(B) Measurement and methodological issues

By far, the most widely studied consequence of presenteeism has been individual productivity loss and the estimated aggregate economic impact stemming from this loss. Research shows that a wide variety of self-reported medical conditions is associated with self-reported productivity loss (reviewed by Schultz & Edington, 2007). A second area that has received some concerted research attention concerns the health and attendance consequences of presenteeism. A systematic review by Skagen & Collins (2016) concluded that baseline presenteeism leads to poor self-rated health and elevated absenteeism in the future. However, to understand presenteeism, research needs to carefully consider what measure is adequate, given the respective research interest. Hence, will discuss different approaches to the

measurement of presenteeism, both the act of presenteeism as well as the productivity loss attributable to it.

(4) Measuring the act of presenteeism

While research on presenteeism as a reason for health-related productivity loss has developed a multitude of different instruments (see Section 5), studies focusing on presenteeism as a behaviour mainly draw upon unvalidated single items (Miraglia & Johns, 2016; Lohaus & Habermann, 2019). More importantly, as shown in Table 2, these measures differ with regard to (1) their wording, emphasizing different definitional aspects of presenteeism (content of the measure), (2) their response format and (3) their recall period, impeding the comparability of the current research findings (Skagen & Collins, 2016).

****Table 2 around here****

Starting with content-related differences, we distinguish three types of measures based on their *content*: The first type of measures captures how many days/times individuals “have gone to work despite feeling sick?” (Demerouti et al., 2009), without any restriction regarding the consequences or reasons for doing so. Despite slightly different wording, these types of measures reflect the definition of presenteeism as “attending work while ill” (Johns, 2010), as they neither restrict the health problems nor the motives. As an exception, studies in the German-speaking countries frequently draw on a multi-item scale by Hägerbäumer (2017). By applying multiple items this scale additionally captures the seriousness of the illness related to presenteeism (e.g. working against the advice of the physician) and gives information about the reliability of the measurement. Translating the scale or developing similar validated measures may help to establish a valid and reliable multi-item measure for presenteeism.

The second type of presenteeism measures is more restrictive, as the items assess only presenteeism that exceeds a certain degree of perceived seriousness of illness. This is depicted

in the items by using a frame of reference (e.g. illness that has justified or legitimized sick leave). The most frequently applied measure of this type is the single-item “Has it happened over the previous 12 months that you have gone to work despite feeling that you really should have taken sick leave due to your state of health?” (Aronsson et al., 2000a p. 504). On the one hand, this kind of measure facilitates the comparison of sickness absenteeism and presenteeism by adjusting for the seriousness of health complaints. On the other hand, the phrase “should have taken sick leave” implies that the behaviour is dysfunctional or deviates from the norm, judging that presenteeism at an excessive level, as judged by the presentee, is negative.

The wording of the third type of items emphasizes the perceived pressure to work despite illness (e.g. “Although you feel sick, you still force yourself to go to work”, Lu et al., 2013: 411). This type of measure excludes presenteeism in cases in which ill people come to work voluntarily (e.g. to distract from pain; Vries et al., 2011; Vries et al., 2012; Holland & Collins, 2018). Thus, this type of measure does not consider other motives unrelated to perceived pressure.

With respect to *response format*, measures of presenteeism differ in terms of what they capture, as they either measure the act or presenteeism (“yes” or “no”), the frequency of showing presenteeism, or the total amount of presenteeism days. Although the last two count measures are probably strongly related, they may diverge, as a single presenteeism episode may cover different numbers of presenteeism days. Arnold (2016) therefore argues that the amount of presenteeism days is more relevant for the economic consequences of presenteeism. Furthermore—with regard to sickness absence— Johns & Al Hajj (2016) indicate that frequency “is not likely a typical metric that people use to think about their attendance behavior” (p. 459), recommending the total amount instead of spells of presenteeism as default format.

Complexity is increased even further by frequency measures coming along with different response options. They usually offer discrete response options such as never, once, 2 to 5 times and over 5 times in a 1-year period (Aronsson et al., 2000a) or relative frequency response formats such as “never in the case of illness” to “very often in the case of illness” (Baeriswyl et al., 2017). However, predefined response categories are criticized, as they restrict information and possibilities of statistical analysis (Skagen & Collins, 2016), and might influence response behaviour, as categories provide information about the conventional frequency of the behaviour (Schwarz et al., 1985). In contrast, total amount measures use mainly an open-ended, fill-in-the-blank response format capturing the number of presenteeism days (e.g. Johns, 2011). Overall, different researchers recommend total amount measures by using an open-ended, fill-in-the-blank option (Arnold, 2016; Johns, 2010; Skagen & Collins, 2016).

Besides the aforementioned differences, measures also vary with respect to their *recall period*. Most measures refer retrospectively to the last 12 months (Miraglia & Johns, 2016). Only very few studies use recall periods of less than half a year (e.g. Collins et al., 2018; Dhaini et al., 2016; Strasser et al., 2017). However, the appropriate time frame for measuring presenteeism is still unclear (Collins et al., 2018; Johns, 2010). Short recall periods might be more susceptible to seasonal fluctuations, whereas predominantly used recall periods of 12 months could be affected by poor memory (Deery et al., 2014). Additionally, these long recall periods could threaten internal validity for studies examining the antecedents of presenteeism, as presenteeism measured retrospectively for the last 12 months might have occurred at the beginning of the recall period, but antecedents were measured afterward. Therefore, it is suggested to examine presenteeism jointly with its antecedents and consequences on a daily or weekly basis. This might reduce memory loss and provide more accurate information (Deery et al., 2014; Johns, 2010).

In addition, further problems when measuring the act of presenteeism need to be considered. First, count measures of presenteeism are a composition of (i) an individual's tendency to choose presenteeism instead of absenteeism when faced by a health problem and (ii) their vulnerability (i.e. their number of health problems) in the period of observation. Consequently, presenteeism and sickness absenteeism count measures will be more positively correlated in populations with low heterogeneity regarding their decision tendencies (but varying degrees of health-related vulnerability), but will be more negatively correlated in populations with low heterogeneity regarding vulnerability, but varying decision behaviour. As most of the previous research found positive correlations between sickness absenteeism and presenteeism count measures (Miraglia & Johns, 2016) it can be assumed that count measures of presenteeism are more strongly dominated by individuals' health-related vulnerability compared to differences regarding individuals' decision tendencies (Gerich, 2015).

These circumstances have important implications for research that aims at analysing antecedents of presenteeism, because antecedents may affect either individuals' decision process or their health-related vulnerability. Some factors may also affect both—decision and vulnerability—which are denoted as double risk factors (Hansen & Andersen, 2008, Aronsson & Gustafsson, 2005). Other conditions—for example, high-quality relationships with leaders, which are thought to be beneficial for followers' wellbeing—may reduce individuals' vulnerability but increase their tendency to decide for presenteeism (Wang et al., 2018b, Anand et al., 2011). Because of the composition of the count measure of presenteeism, the effects could cancel out each other, resulting in a zero correlation.

Such and other biases regarding count measures (Gerich, 2015) suggest that research strategies are needed to separate health-related and decision-related effects. One suggested strategy is to adjust for sickness absence measures (Hansen & Andersen, 2008). The aim of this strategy is to identify factors associated with more presenteeism of individuals that could

be expected from their volume of sickness absenteeism. Simulation studies confirm that this strategy is better suited to identify factors that are associated with the decision process (Gerich, 2015). As an alternative, Gerich (2016) suggests computing an estimator of an individual's presenteeism propensity, which is calculated by dividing presenteeism days by the sum of sickness absenteeism and presenteeism days. This propensity measure is an estimate for individuals' probability to choose presenteeism over absenteeism regardless of their number of health problems and therefore it is suited to identify factors that are associated with the decision process and to dismiss factors that are associated with vulnerability.

The second problem is that the measurement of presenteeism—especially when it is contrasted with sickness absence data—is often criticized for its subjective nature. It could be argued that the number of days of sick leave (especially when registered data is used) is a more objective measure, because it is often certified by physicians. However, we argue that the subjective perspective of illness is fundamental for sickness absence and presenteeism behaviour and not necessarily a source of bias (see Section 1). As the subjective illness perspective represents a common ground for both behaviours, we recommend that research should primarily focus on the subjective illness perspective. Additionally, we argue that the "objective" character of sickness absence data tends to be overestimated. This is grounded in the following arguments: Not all cases of sickness absence are certified by physicians. Even certified spells of sick leave are usually initiated by and based on the subjective perception of illness because feelings and symptoms motivate an individual to consult the physician. Moreover, research has shown that there is a considerable lack of consensus between physicians regarding sickness certifications (Haldorsen et al. 2009). Furthermore, measures of subjective illness were found to be among the best single predictors of mortality and therefore we follow Schnittker & Bacak (2014) that "self-rated health is fundamentally subjective, but it stands as a uniquely strong predictor of mortality and, thus, provides a pedestal upon which the psychosocial approach to health rests" (p. 10).

In sum, we argue that the choice for presenteeism measure should be determined by research interest. Studies aiming to compare presenteeism and sickness absenteeism or focusing on the dysfunctional aspect of presenteeism should use items with a frame of reference regarding the seriousness of health complaints. Items without this frame of reference are suitable to examine functional as well as dysfunctional presenteeism regardless of the seriousness of the associated health complaints. However, regardless of the selected combination, it is important to describe the measures used in detail, to increase comparability of results across studies. Further, independent of the item content, we recommend using total amount measures with an open response format, rather than categories, and considering presenteeism propensity when analysing predictors affecting the decision process. Yet, results regarding presenteeism propensity and count measures should be compared to draw valid conclusions. With regard to the optimal way to measure presenteeism, more research comparing different measures of the act of presenteeism that acknowledges the above-mentioned challenges is needed.

(5) Measuring and Valuing Productivity Loss Attributable to Presenteeism

Productivity losses related to presenteeism refer to the economic consequences associated with the amount of perceived work impairment or time loss of normal activities from paid work (Kigozi et al., 2017). When analysing productivity loss, a distinction can be made between impaired performance at paid work, productivity loss due to absence from paid work, and unpaid employment concerned with lost home productivity (van Rooijen et al., 1996). Although the latter two can be of importance, we concentrate on productivity costs related to impaired performance due to health problems, i.e. productivity loss related to presenteeism, which is arguably of great importance for organizations.

The perceived productivity loss is mostly measured over a specific period, e.g. seven days, six or twelve months, and can be constructed in several different ways using responses from surveys. For example, the Health & Labour Questionnaire (van Rooijen et al., 1996)

includes a workplace presenteeism scale that measures the number of additional hours that should have been worked to compensate productivity losses due to health impairments. The Work Limitation Questionnaire (Lerner et al., 2004) has a productivity loss score that measures presenteeism considering the percent reduction (from 0 – least limited to 100 – most limited) in output (considering the past 2 weeks) compared with the output of a healthy (i.e., not limited) employee. Another well-known instrument is the Stanford Presenteeism Scale 6 (Koopman et al., 2002) that comprises a six-item scale measuring how health impairments affect employees' capacity to complete their work and to avoid distractions while performing tasks.

However, as mentioned earlier, questions have been raised regarding the psychometric quality of many productivity loss instruments (e.g. Brooks et al., 2010; Johns, 2012; Thompson & Waye, 2018), especially a lack of convergence between various instruments and the absence of true construct validity evidence. Interestingly, many measures lack a history of basic psychometric properties but nonetheless lay claim to being construct-valid (Ospina et al., 2015), while drawing on parallel self-report measures of productivity, ability to work, or perceived impact of health on work instead of independent estimates of productivity loss (Beaton et al., 2010).

Recently, Thompson & Waye (2018) employed multi-trait multi-method analysis to compare four productivity loss instruments designed to measure the impact of going to work ill on the quantity and quality of work. Failing to find convergence, they concluded that "... the structural attributes of these instruments and their mode of administration (i.e., method variance) contribute more to the ultimate test score than does the nature of productivity, whether amount or quality (p. 665)." Such a lack of convergence has frequently been shown in the literature (Brouwer et al., 1999; Meerding et al., 2005) and can be exacerbated when a variety of methods are used to attach economic costs to presenteeism, which even consolidates the error. For example, Zhang et al. (2010) estimated productivity loss among

arthritis sufferers to cost between \$15 and \$143 per week, depending on the measure. Such widely varying estimates, which have been found repeatedly (Braakman-Jansen et al., 2012), are untenable and beg for reconciliation.

Another widespread approach to value productivity losses related to presenteeism is the multiplier approach (Pauly et al., 2008; Strömberg et al., 2017; Zhang et al., 2015). For example, job-dependent presenteeism multipliers have been estimated to indicate the effects of presenteeism on team production, the absence of a suitable replacement worker, and the requirements for timely output (Pauly et al., 2008). Although these studies claim that the cost associated with presenteeism is as high or maybe even higher than absenteeism, it is questionable whether the exact cost of presenteeism is correctly estimated. Therefore, we advise caution regarding the estimated costs of presenteeism.

One of the major problems might be the common method variance among loss measures as a manifestation of general method variance problems in this domain (Thompson & Waye, 2018). Johns (2012) argued that the inherent vagueness of productivity for many kinds of jobs and implicit theories about the connection between health and productivity may result in the inflation of both loss estimates and the connection between health and loss. A recent meta-analysis provides indirect evidence for the latter supposition. Contending that productivity loss measures conflate two correlated constructs, attending while ill and damage to productivity, the authors predicted and found what they described as “artificial inflation” of correlates of productivity loss as compared to those for the act of presenteeism (McGregor et al., 2018). In addition, the concept of productivity loss is clearly prone to employers having difficulties categorizing precisely whether productivity loss is attributable to health.

In order to ascertain the true value of productivity loss related to presenteeism, there are inherent challenges that need to be addressed. Essentially, there is a need to compare self-reported and objective measures of productivity (i.e., physiological, contextual data) that allow easy analyses of micro-processes with real-time continuous assessment in natural

environments considering other sources of information (Goyal et al., 2016). Additionally, researchers should consider the advantages of other psychometric approaches such as Item Response Theory (Ellis & Mead, 2002) to infer validity and reliability of the existing instruments in both the conversion algorithm to generate monetary estimates and the capacity to infer indexes of productivity loss due to health impairments.

(6) Further methodological challenges

Aside from the challenges regarding the measurement of the act of presenteeism and its associated productivity losses, further challenges regarding the evaluation of presenteeism need to be considered. First, one of the major issues in presenteeism research is the zero-inflated and highly skewed distribution of presenteeism (Collins et al., 2018). Mostly, there is a large percentage of employees reporting no or only one occasion of presenteeism within the previous 12 months (e.g., 49.4%; Janssens et al., 2013). While research often uses data categories, ascertaining the occurrence of presenteeism and minimizing recall bias (Skagen & Collins, 2016), some issues arise regarding this approach. On the one hand, the ex-post building of categories makes it hard to compare results across studies, as differences in the response options exist (Skagen & Collins, 2016; see Section 4). On the other hand, categorized presenteeism may constitute a loss of information and thus impair the possible statistical analysis (Skagen & Collins, 2016).

Second, research on presenteeism is mostly based on cross-sectional data (Lohaus & Habermann, 2019; Miraglia & Johns, 2016) leaving to future research the challenge to untangle causality and establish the temporal stability and the dynamic processes going along with presenteeism (see Section 5). Research in the field of occupational health research acknowledges the need for longitudinal designs to address changing and dynamic aspects and to overcome issues related to cross-sectional data (Liu et al., 2016).

Longitudinal studies primarily aim to explore the change in the construct of interest and to

explain how a change in one construct results in a change in another construct (Liu et al., 2016). Thus, they rely on change within individuals, going beyond knowledge of change between persons and therefore, having clear benefits for theorizing as well as for useful practical recommendations. Previous longitudinal research on presenteeism is affected by some methodological issues. Again, the varying length of periods of time between data collection across studies (between two and 36 months; Skagen & Collins (2016)) makes it hard to compare the results of various studies. Furthermore, the mainly used long periods of time (one year or longer) neglect short term processes (Skagen & Collins, 2016). However, conditions immediately leading to presenteeism or prompt effects of presenteeism are important for theorizing on presenteeism as well as for practitioners. Furthermore, long periods of follow up entail a risk of non-random attrition bias caused by dropout from studies (e.g., severe health conditions) disproportionately not excluding healthy employees from the sample (Skagen & Collins, 2016). In a study by Bergström et al. (2009a) participants dropped out at follow up had reported more presenteeism and bad health at baseline compared to the respondents which took part in both the baseline and the follow up..

To overcome these methodological issues future research should consider the following aspects. First, as previous research showed that some occupational groups have a higher risk of presenteeism (Aronsson et al., 2000a) (see Section 8), the sampling strategy should cautiously consider the specifics of the target population, judging the benefits of higher probabilities of finding presenteeism in specific groups with problems regarding selection bias. Second, the benefits of using count data to measure presenteeism have been discussed previously in the paper (see Section 4). Count data might also reduce the loss of information allowing a broader spectrum of statistical analyses (Coxe et al., 2009). Third, to meet the requirement to assess the loss of productivity associated with presenteeism, daily

self-report might be an effective way. It overcomes memory bias based on the (long) recall period, and the day reconstruction method is an important methodological approach that captures individual experiences on a given day either at the end of the day or on the following day (Atz, 2013). Further, such an approach might help us to analyse short- and long-term changes in presenteeism, its antecedents, and outcomes. This can be realized with diary studies such as event sampling and daily diaries (Ohly et al., 2010).

Finally, longitudinal modelling techniques such as latent change score modeling can be utilized to further increase our understanding of presenteeism (Liu et al., 2016; Raudenbush & Bryk, 2002). By controlling for stability effects, that is, the influence of constructs on themselves over time (also called autoregressive effect; Liu et al., 2016), the impact of presenteeism beyond the outcome's own history (level-to-change effect) can be better explained. This represents the basic approach to model change (Liu et al., 2016). Combining this approach with cross-lagged designs enables enhancing causal inference by examining reverse causality and reducing concerns about third variables (Liu et al., 2016). To describe the form and duration of the change in a construct (i.e. change trajectory of a construct), such as the development of presenteeism within an episode of illness, latent growth models might be appropriate (Liu et al., 2016).

While we acknowledged that—given a specific research goal—cross-sectional data can be useful (Spector, 2019), especially when used in an explorative setting, we argue that the benefits of using longitudinal data outweigh the risks of gathering longitudinal data (e.g., non-random drop-out, reduction in sample size, unrepresentative sample, recall biases, causal order). Consequently, future research should gather longitudinal and multi-sourced data to overcome the aforementioned challenges.

(7) Interventions on presenteeism

Most of the intervention studies developed with the aim of reducing sickness

attendance or productivity loss due to presenteeism come from the health-related, environmental or occupational medicine literature (Ferreira, 2018; Yang et al., 2016a). These studies have emphasized three types of interventions, which can be applied in the field of presenteeism: (i) physically-oriented; (ii) psychologically-oriented and (iii) organization-related interventions. Physically-oriented interventions are designed to promote the physical health of employees, including various health promotion programs (e.g., Michishita et al., 2017). Psychologically-oriented interventions aim at activities that increase well-being and productivity of employees, such as relaxation and meditation techniques or cognitive/behavioural psychotherapies. Finally, organization-related interventions are designed to influence presenteeism from the organizational perspective, including the development of skills, support from supervisors and co-workers, work flexibility, or the need to reduce (or redistribute) workloads (Dababneh et al., 2001).

For example, a successful strategy conducted with a sample of 1,227 participants suggested that interventions developed to improve middle-aged and older adults' depression symptoms and other work-related limitations resulted in an increased productivity of 44% in the work-focused intervention group (Lerner et al., 2015). These interventions included a four-month telephone-based counseling considering aspects such as coaching, care coordination, and cognitive-behavioral therapy. Other successful interventions (e.g., Michishita et al., 2017; Edwardson et al., 2018) supported the possible effect of interventions on the reduction of presenteeism.

Therefore, we suggest the following to improve interventions on presenteeism in future workplace practice. First, while the significant impact of psychosocial factors has been examined, we still lack knowledge on how to intervene with regard to the process of presenteeism (see Section 5) (Yang et al., 2016a; Yang et al., 2016b). Future research may examine the impact of specific psychosocial factors and how they may be effectively

influenced. Second, further interventions may explore the potential of gamification and serious games. The literature shows the benefits of integrating autonomous virtual agents as interactive partners in such games, especially when endowed with human-like social intelligence (Prada & Paiva, 2009), empathetic behaviour, or cultural awareness (Mascarenhas et al., 2010). Therefore, gamification and serious games might be helpful to monitor presenteeism as well as to reduce presenteeism through the development of daily self-regulation strategies.

However, when developing such interventions, researchers should consider a rigorous methodology (Ammendolia et al., 2016). When planning an intervention on presenteeism, the initial step is a needs assessment regarding the diagnosis of the health condition of each participant. The second step comprises the list of performance objectives and the identification of priorities for each health condition. Step three considers the development of methodologies that are appropriate for each health condition (i.e., gamification, outdoor / indoor experiences, coaching...) and practical implementation strategies, using physically (e.g., physical exercises) or psychologically-oriented (e.g., mindfulness exercises) interventions, as well as organization-related (e.g., flex time, part-time work, leadership communication) ones. The fourth phase includes the intervention program and recommendations for each participant, considering the aforementioned complexity of the formation of presenteeism (see Sections 8-11). Finally, the intervention should be appraised and validated, ideally with the inclusion of follow-up measures of health status and return of investment measures. Again, challenges with the measures of presenteeism should be carefully reasoned (see Section 3 and 4).

(C) Context of presenteeism

Several reviews of the empirical literature summarize current knowledge concerning the antecedents and correlates of presenteeism (Garrow, 2016; Johns, 2010; Knani et al., 2018;

Lohaus & Habermann, 2019; McGregor et al., 2018; Miraglia & Johns, 2016; Schultz & Edington, 2007). The existing results, which we will briefly describe in the following, are to serve as a foundation for the deeper analysis of the role of context, which will be described in a next step.

At the most basic level, we know that presenteeism is most prevalent among those who are relatively ill rather than in relatively good health. This is by no means inherent in the definition of presenteeism. On the one hand, unhealthy persons are more likely to go to work when ill. On the other hand, the less healthy might be more inclined toward absenteeism, with presenteeism being the behaviour of choice among those more fit. However, the Miraglia & Johns (2016) meta-analysis indicated a population correlation of $-.31$ between health status and presenteeism. Thus, the less healthy are more inclined to both absenteeism and presenteeism, which are positively correlated ($r = .35$, Miraglia & Johns, 2016).

Further, presenteeism is considerably more predictable than absenteeism. For example, a meta-analytic structural equation model that included job demands, job resources, and various constraints on absenteeism accounted for 32% of the variance in presenteeism but only for 14% of that in absenteeism. Similar findings have been reported in individual primary studies (Collins et al., 2018; Sanderson et al., 2007). It is possible that this differential is due to presenteeism being more discretionary. However, meta-analyses reveal that this differential predictability in favour of presenteeism does not extend to demographic variables. On the contrary, Miraglia & Johns (2016) reported weak associations between presenteeism and age, gender, education, and organizational tenure, although these demographics are fairly robust correlates of absenteeism (Côté & Haccoun, 1991; Ng & Feldman, 2008, 2009, 2010; Patton & Johns, 2015).

A distinctive feature of presenteeism is its robust positive association with a wide range of job demands and various stress-related features of the workplace (Miraglia & Johns, 2016).

Overall job demands, heavy workload, understaffing, and overtime are prominent correlates, as are uncivil interpersonal behaviours (abuse, harassment, discrimination), stress, and, particularly, burnout. They contribute to vulnerability and ill-health, which mediates the connection between negative workplace features and presenteeism (e.g., Pohling et al., 2016). In addition, many of the negative job design features likely cause the behaviour indirectly via the imposition of attendance pressure (Baker-McCleary et al., 2010; Biron & Saksvik, 2009; Rostad et al., 2015; Saksvik, 1996). In addition, uncivil workplace behaviours may reflect a power differential whereby those who are prone to mistreatment also lack discretion over their work attendance.

Job resources are considerably weaker correlates of presenteeism than job demands (Miraglia & Johns, 2016). Particularly in the job design domain, resources such as task significance, overall job control, and latitude to adjust the job to one's health condition reveal zero to very weak negative associations with presenteeism. Interpersonal factors, including quality of leadership and social support from colleagues, supervisors, and the organization fare a little better, but still exhibit weak negative associations.

The tendency for job demands to trump job resources in accounting for presenteeism may be yet another manifestation of the general psychological tendency of "bad to be stronger than good" (Baumeister et al., 2001). More specifically, as noted, many job demands both damage health and compel attendance. Yet, the impact of resources on health is less clear, and in some cases, resources might actually encourage attendance when ill rather than discourage it, as was discussed above in the context of distinguishing between decision tendencies and vulnerability. Such countervailing effects limit the association between resources and presenteeism.

Work attitudes comprise a final category of variables that have been studied in conjunction with presenteeism. Meta-analytic evidence suggests that job satisfaction, affective

organizational commitment, and work engagement are positively related to going to work ill (Miraglia & Johns, 2016). Although these associations are not strong, the consistent positive signs are of great interest, as they reflect positive motives for what has often been portrayed as an aversive behaviour. This is reflected in the dual path meta-analytic model (Miraglia & Johns, 2016), which considers how demands, resources, and constraints on absenteeism operate via health and job satisfaction to determine presenteeism. Somewhat similar models, using primary data, have been offered by Christian et al. (2014) and by McGregor et al. (2016).

In the following, we will discuss important, yet insufficiently studied, aspects that might help increase our understanding of presenteeism. We focus on different contextual aspects that might be important areas for further research.

(8) A social perspective on presenteeism

So far, research on presenteeism has neglected a social perspective of presenteeism, particularly in view of the history of absenteeism research (Johns, 1997; Cooper & Barling, 2008; Harrison & Martocchio, 1998) and some initial evidence from narrative and meta-analytic reviews of the literature on presenteeism (Lohaus & Habermann, 2019; McGregor et al., 2018; Miraglia & Johns, 2016) suggest the value of considering the social aspect of presenteeism. Borrowing from the return-to-work literature, we draw on the IGLOO framework (Nielsen et al., 2018) to organize these factors into levels of influence above the Individual (I), namely the Group (G), Leader (L), Organization (O) and Overarching/social context (O). We recognize that these levels do not operate in isolation and that multiple interactions among them are possible to determine the individual behaviour of attending work when sick.

On the group level, support and positive relationships with colleagues have been demonstrated to be negatively related to working while ill, although weak meta-analytic associations have been reported (Miraglia & Johns, 2016). More recently, hints of a more

collective vision of presenteeism come from studies on group climate. For example, shared perception of the extent to which a team is concerned about health issues (Schulz et al., 2017) has been shown to decrease attendance when ill. Similarly, employees' shared perceptions of co-worker competitiveness, the difficulty of replacement, and extra-time valuation, defined as presenteeism climate (Ferreira et al., 2017; Mach et al., 2018), have been linked to presenteeism. Despite this recent evidence, the influence of presenteeism climate on employee behavior remains to be explained. Social information processing theory (Salancik & Pfeffer, 1978), self-categorization (Abrams & Hogg, 1988) and social identity (Tajfel & Turner, 1986) theories as well as social comparison theory (Sherif, 1936; Festinger, 1954) may provide the basis to understand why and how individuals conform to the dominant presenteeism climate. These theories emphasize the normative control of individual behaviour, focusing on norms, defined as the communal perceptions of appropriate standards and behaviours in a given social unit. They illustrate why and how individuals in the same social unit follow the prevalent norm, aligning their conduct to the expected standards and values, due to various motives, such as the need for social approval, information seeking, or ambiguity reduction. Building on these theories as well as on the parallel literature on absence culture and norms (Johns & Nicholson, 1982; Ruhle & Süß, 2019), we advocate focusing attention on presenteeism climate and, more specifically, group-level presenteeism norms, based on individual perceptions of what is approved or disapproved of by others regarding presence at work when ill (injunctive norms), and how people actually behave (descriptive norms).

In line with social learning theory (Bandura & Walters, 1977), factors such as the leader's attitudes toward presenteeism and his/her actual behavior may directly influence employee tendency to work when ill by modeling appropriate, expected attendance behaviors at the workplace. Such an influence has been confirmed regarding absence behaviours (Løkke Nielsen, 2008). Moreover, leadership behaviors and styles have been proven to impact employee health and wellbeing (for reviews, see Kuoppala et al., 2008; (Skakon et al., 2010).

So far, supervisory support and quality leadership have been depicted as buffering factors able to reduce presenteeism (Lohaus & Habermann, 2019; Miraglia & Johns, 2016). Furthermore, in line with the frameworks of relational leadership (Uhl-Bien, 2011) and contextual leadership (George et al., 2017), it seems imperative to explore presenteeism in relation to the leader-followers relationship. Indeed, leader-followers dynamics can influence presenteeism both directly and indirectly via the creation and transmission of presenteeism climate (Ferreira et al., 2017). In this regard, a recent study by Wang et al. (2018b) shows a positive effect of leader-member exchange (LMX) on presenteeism through the mediating effect of the approach dimension of presenteeism. They also demonstrated that workload moderates the positive association between presenteeism motivation and behaviour, so that individuals experiencing higher workload are more likely to work when sick. Hence, the quality of the exchange between leaders and employees can be a key driver of employees' presenteeism (Hunter et al., 2013).

Therefore, we call for further empirical research not only on the consequences of leaders' behavior and styles for presenteeism but also on the exchange between leaders and followers. This would include the investigation of the reciprocal influence between supervisors' and employees' presenteeism behaviors and their impact on their health and safety (e.g., in the case of contagious illness), wellbeing, and productivity.

Initial evidence has shown that presenteeism is affected by strict absence standards, positive organizational factors (e.g., support and justice), critical organizational features (e.g., downsizing), and HR practices (e.g., health-related practices) (Lohaus & Habermann, 2019; Miraglia & Johns, 2016). Another important variable in this context is presenteeism climate, an organizational aspect which results from beliefs and values regarding the sector, department, organization, and society, which compel employees to attend work despite being ill. Presenteeism climate can be considered in three dimensions: (1) extra-time valuation; (2) supervision distrust; and (3) co-workers' competitiveness (Ferreira et al., 2015).

However, the literature on presenteeism climate is still in its infancy, and greater effort must be invested in exploring the organizational resources and constraints that can shape such perceptions of presenteeism. A related research question pertains to understanding the organizational circumstances that may modify the relationship between the individual- and group-level factors and working while ill, by investigating the crucial moderating role of the organizational environment.

Finally, the social context level focuses on aspects related to the overall culture and society (e.g., national cultural values), the economy (e.g., labour market), the political and legislative context (e.g., welfare system), and the environment and infrastructure in general (Lohaus & Habermann, 2019). The importance of such factors outside the immediate organizational context has been supported by some initial results (McGregor et al., 2018; Miraglia & Johns, 2016). We strongly encourage cross- and multi-level research on the role of the overarching/social context for presenteeism. Such designs can also facilitate the understanding of how the overarching, distal context can influence individual behavior through mechanisms at lower levels, such as organizational HR practices and policies or presenteeism culture and norms.

(9) Presenteeism in specific occupations and sectors

Just how widespread is going to work when ill? This question has been of interest since Aronsson, Gustafsson, and Dallner's (2000) pioneering inquiry into the subject. In line with their findings, the results of a number of more recent large-scale studies indicate that presenteeism is a common work behaviour across occupations (Lohaus & Habermann, 2019), thus well worth being paid attention to by both researchers and managers. For instance, 66% of Australian SME owners/managers exhibited presenteeism in the past month (Cocker et al., 2013); 57% of German teachers engaged in the behaviour (Dudenhöffer et al., 2016); 56 % of UK academics worked when sick either often or always (Kinman & Wray, 2018); 78% of New Zealand doctors and dentists reported 1 or more days a year (Chambers et al., 2017).

Although these numbers are not directly comparable, they hint at occupational, sectoral, and national differences (see Section 10) in prevalence rates, all of which have been observed in the European Working Conditions Surveys. For instance, presenteeism tends to be higher among managers than among crafts and trades workers and higher in the health and education sectors than in industry (Eurofound, 2017). There has been virtually no comparative research to explore the reasons for such differences, although a line of research focusing on presenteeism among physicians has proven informative (e.g., Chambers et al., 2017; Giæver et al., 2016; McKevitt et al., 1997; Rostad et al., 2017).

Overall, presenteeism is predominant among the educational, welfare and health sectors (e.g., Aronsson et al., 2000a; Bergström et al., 2009b; Ferreira et al., 2018; Ferreira & Martinez, 2012; Martinez & Ferreira, 2012) and according to Aronsson et al. (2000b), occupations in the caring, helping, and primary teaching sectors are most prone to presenteeism, and this may be due to the existence of cultures grounded in part on loyalty to and concern for vulnerable clients (i.e., patients and children). For example, according to Zacher & Schulz (2015) health sector employees have revealed a culture of loyalty and profound concern toward their clients' vulnerability. Ferreira et al. (2018) claim that employees working in these sectors have more propensity to go to work while sick, due to the specific characteristics associated with their jobs (e.g., providing care or welfare services).

Some of these results might arise since educational, welfare and health sectors are usually female-dominated sectors. But while Johns (2010) states that gender is an essential personal variable when explaining presenteeism, and research provides first evidence for such effects (Leineweber et al., 2011; Martinez & Ferreira, 2012) we propose the need to systematically study the association between presenteeism, occupation, and gender, since this has not yet been a focus in the literature.

According to Johns (2010), job conditions, such as high job stress, high workload or understaffing contribute to the formation of presenteeism. Within some sectors, such

negative job conditions are widespread, for example when 24/7 availability or “face-time” in the health sector is expected, and when long working hours as well as working overtime are positively related to presenteeism (Miraglia & Johns, 2016). Therefore, presenteeism should be less common in sectors with higher levels of flexibility (e.g. research).

Further, as there is evidence for sector-specific cultures that promote presenteeism (Deery & Jago, 2009), especially organizations in highly competitive working environments, for example in the hospitality industry, should be interested in maintaining a healthy and happy workforce that can deliver high-quality services to meet the expectations of their customers (Chia & Chu, 2017). In fact, in such sectors, employees’ presenteeism may affect not only the individual, but also their co-workers (Deery & Jago, 2009), customers (Arslaner & Boylu, 2015) or clients (Widera et al., 2010) and consequently, an organization’s profitability. Research shows large differences among groups with the highest levels of presenteeism found in female-dominated workplaces in the care, welfare, and educational sectors, while there are lower levels in more male-oriented sectors such as manufacturing and engineering (Aronsson & Gustafsson, 2005; Aronsson et al., 2000a).

Given that personal financial difficulties, job insecurity, as well as poor rewarding systems (Johns, 2010; Miraglia & Johns, 2016) might lead to higher rates of presenteeism, the profitability of the sector, as for example in social work environments, might be another characteristic related to the phenomenon. Issues regarding remuneration levels are key challenges to human resource management (Baum, 2012). Low-income workers depending on their full income and fearing a loss of income are more likely to appear at work despite illness than highly paid employees. While such attitudes and fears are individual antecedents, sectors might create a systematic context in which it is plausible that presenteeism occurs more frequently than in others. Therefore, more research is needed to investigate the sector-specific effects of work environments on presenteeism.

(10) Cross-cultural and cross-national aspects

There are substantial differences in the prevalence of presenteeism across nations (Eurofound, 2012), and a small body of research has probed the reasons. Ferreira et al. (2017) found that Latin countries tend to have weaker presenteeism climates than non-Latin countries, downplaying co-worker competitiveness and the value of putting in extra hours. However, Latin countries with highly masculine values (e.g., Ecuador) exhibit elevated presenteeism (Martinez et al., 2018). Based on the Confucian tradition of hard work, persistence, and endurance, Lu et al. (2013) predicted and found that the prevalence of presenteeism was higher in China than in Britain (see also Lu & Kao, 2018; Wang et al., 2018a). Rostad et al. (2017) reported higher presenteeism among Italian physicians than those in Norway and Sweden and attributed the differential to variation in sick leave benefits. In the Scandinavian context, where the social welfare systems are relatively well developed one could assume that presenteeism is low. However, a random sample study by Johansen et al. (2014) found that 56 percent of the Norwegian and Swedish respondents reported presenteeism the previous year. A study of presenteeism among the self-employed and organizationally employed in Northwestern Europe (Nordenmark et al., 2019) found that the self-employed report a significantly higher level of presenteeism than the employed. This difference is to a high degree explained by the variables measuring time demands, which indicates that the self-employed have a higher risk of reporting presenteeism because they experience higher time demands. Other research confirms that self-employed individuals, particularly self-employed women, report higher levels of time strain compared to organizationally employed persons (Hagqvist et al., 2017). In summary, differences in organizational climate, worker values, and social support infrastructure might contribute to cross-national disparities in presenteeism, perhaps mediated by variation in the legitimacy of absenteeism across cultures (Addae et al., 2013).

Consequently, we can assume that country characteristics and culture play a pivotal role in the formation of presenteeism. However, a lot of work remains to be done, as

presenteeism and its productivity losses could be influenced by specific cross-cultural dimensions (e.g. Hofstede, 2011; House et al., 2004). In particular, previous cross-cultural studies revealed that employees from countries with high masculine cultures tend to devote more time to work, and receive more incentives to stay long hours at work in highly competitive environments (e.g., Simpson, 1998). Accordingly, future research should seek to address the role of presenteeism in this equation, by examining whether presenteeism and/or productivity losses are associated with cultural dimensions.

Overall, presenteeism is undoubtedly related to economic and social constraints (Dew et al., 2005), country characteristics (e.g., labour law, social security system), as well as cultural differences, which is why research should consider the cultural context in more detail.

(11) Contemporary changes in the workplace

In addition to social, occupational and cultural influences, research on presenteeism needs to consider the changes in the working life of individuals, triggered by societal, economic and technological developments. Improvements in information and communication technology (ICT) facilitate new ways of flexible work designs, giving many employees the possibility to decide when and where to work (e.g., Demerouti et al., 2014). Despite growing knowledge on changes, such as digitalization, work flexibility, boundarylessness of work and subjectivization (Ďuranová & Ohly, 2016; Flecker et al., 2017) research focusing on their importance for presenteeism is still scarce.

Building on this idea of an “employee’s felt obligation to attend” (Miraglia & Johns, 2016), Ma et al. (2018) discuss the motivation for presenteeism and differentiate between in autonomous and controlled motivation. While autonomous motivation is equivalent to Miraglia & Johns (2016) attitudinal/motivational path, controlled motivation “refers to the state that one performs a behaviour with the sense of being pushed, pressured or regulated by something other than one’s authentic will” (Ma et al., 2018). Building on these findings,

we assume that ‘new’ work characteristics may increase (1) autonomous motivation, so that employees want to show presenteeism, (2) controlled motivation, so that employees feel that they have to show presenteeism, and (3) impair individual health, increasing vulnerability and thereby the probability for presenteeism.

Digitalization may lead to higher autonomous motivation, as it offers job resources such as an increase in networks and collaboration options. For example, it simplifies the accessibility of work-related knowledge and information, allows the use of new collaboration tools (e.g., cloud working, video communication systems), and offers more opportunities to shape and take responsibilities for work tasks (Hertel et al., 2017); Köhler et al., 2017). However, it also increases the “need to work faster and face tighter deadlines” (Paškvan & Kubicek, 2017: 26) which might foster controlled motivation. Finally, it may also be detrimental to individuals’ well-being, as constant connectivity, information overload or the increased work demands might result in stress, restrict recovery (Ďuranová & Ohly, 2016; (Rice, 2017)), and therefore increase the risk for presenteeism.

Further, digitalization facilitates new ways of flexible work designs (Rice, 2017). Work flexibility includes flexibility regarding the work schedule (flextime) and regarding the location (flexplace, Gerdenitsch, 2017; Jeffrey Hill et al., 2008). Research indicates that flextime, as well as flexplace, are positively associated with work satisfaction (Baltes et al., 1999; Gajendran & Harrison, 2007; Kelliher & Anderson, 2010; Peters et al., 2014), which indicates autonomous motivation. Additionally, flexplace and flextime facilitate showing presenteeism voluntarily, for example in cases of chronic illness (Holland & Collins, 2018). Flexplace may generally facilitate presenteeism, as individuals work in convenient surroundings, do not have to travel to work and are aware of not passing on their infection to their colleagues (Rousculp et al., 2010). Flextime offers the opportunity to start work later or go home earlier, making it easier to work despite illness at least part of the time

(Irvine, 2011). However, work flexibility is also associated with increased pressure to work and therefore controlled motivation. Employees with higher work flexibility tend to work longer and more intensively than those employees at the employer's premises (Eurofound, 2017; Kelliher & Anderson, 2010). Based on qualitative data, Kelliher & Anderson (2010) conclude that employees intensify their work effort as they feel a sense of obligation in exchange for the offered flexibility. Finally, with respect to the vulnerability and health impairment, research findings are contradictory, as both favourable and detrimental effects on employees' health are found (e.g., Amlinger-Chatterjee, 2016; Eurofound, 2017; Nijp et al., 2012). This may result from the "risk of working time impinging on non-working time" (Eurofound, 2017: 56), as various types of work can be practiced anywhere without time constraints, which facilitates the extension of work into non-work time (Korunka & Kubicek, 2017). However, this prolonged work activities restrict recovery from work, leading to strain, sleep problems, and burnout in the long run (Derks et al., 2014; Ďuranová & Ohly, 2016). Further research disentangling those two concepts is necessary.

In sum, we argue that the relationship between contemporary changes in the workplace and presenteeism should be considered in terms of three different mediating mechanisms mentioned above (autonomous and controlled motivation, impaired health). Furthermore, changes in the world of work are constant and are supposed to lead to other new characteristics with relevance for presenteeism. This should be kept in view by researchers to uncover the beneficial as well as detrimental effects of these changes.

Conclusion

Publications that focus on presenteeism are steadily increasing. In view of this growth of research, we believe that for the further development of the field of presenteeism, several issues need to be addressed. Consequently, based on current findings and multiple perspectives, this position paper has aimed to provide insights into the state of the field,

important aspects to consider as well as promising avenues for further research.

First, we discussed different approaches to the concept of presenteeism, as we strongly believe that the core of scientific progress is deeply rooted in a clear understanding of the phenomena under study. In an attempt to define presenteeism—as the behaviour of working with ill-health—we explicitly acknowledge that deviations of such a definition can be useful if they are grounded in well-reasoned decisions and described transparently. The same goes for any further aspects, be it the analysis of functional and dysfunctional consequences or the focus on a process perspective. Second, we provided an overview of different aspects of the measurement of the act of presenteeism, as well as the productivity loss associated with it. While we highly appreciate previous work, we ask for caution when costs associated with presenteeism are estimated. More research is needed before consistent and fundamental claims regarding the costs and benefits of presenteeism can be made. More importantly, to avoid misleading recommendations, such analysis should take various factors into account, such as the type of illness and the type of work. Third, and related to the complexity of the phenomenon, research on presenteeism should recognise and include the specific context in which the behaviour occurs. Social, occupational, and cross-cultural aspects, as well as contemporary changes in the workplace affect the perception of what behaviour is adequate. Comparisons that delve deep into these contextual differences will help us to better understand presenteeism, which is a necessary condition to develop and communicate adequate interventions that might help individuals and organizations deal with this phenomenon.

Overall, we aim at providing guidance for research in the field of presenteeism, both for researchers who are unfamiliar with presenteeism and for those who are active in the field. Short of providing a systematic roadmap with normative instructions, we share impressions and experiences, possible threats and challenges, and apart from that, we

outline important decisions regarding concept, measurement, and context when studying presenteeism. We believe that for the future of research on presenteeism, it is important to include the perspectives of various disciplines. To understand presenteeism, its formation and its consequences, the active interplay between such different perspectives is important, because it enables them to have a stimulating effect on each other and helps us to deal with the increasing phenomenon of presenteeism.

References

- Abrams, D., & Hogg, M. A. (1988). Comments on the motivational status of self-esteem in social identity and intergroup discrimination. *European journal of social psychology*, *18*, 317–334.
- Addae, H. M., Johns, G., & Boies, K. (2013). The legitimacy of absenteeism from work: A nine nation exploratory study. *Cross Cultural Management: An International Journal*, *20*, 402–428.
- Amlinger-Chatterjee, M. (2016). Psychische Gesundheit in der Arbeitswelt: Forschung Projekt F 2353: Atypische Arbeitszeiten. <https://www.baua.de/DE/Angebote/Publicationen/Berichte/F2353-3a.html>.
- Ammendolia, C., Côté, P., Cancelliere, C., Cassidy, J. D., Hartvigsen, J., Boyle, E., Soklaridis, S., Stern, P., & Amick, B. (2016). Healthy and productive workers: Using intervention mapping to design a workplace health promotion and wellness program to improve presenteeism. *BMC Public Health*, *16*, 1190–1208.
- Anand, S., Hu, J., Liden, R. C., & Vidyardhi, P. R. (2011). Leader-member exchange: Recent research findings and prospects for the future. *The Sage handbook of leadership*, 311–325.
- Arnold, D. (2016). Determinants of the Annual Duration of Sickness Presenteeism: Empirical Evidence from European Data. *Labour*, *30*, 198–212.
- Aronsson, G., & Gustafsson, K. (2005). Sickness Presenteeism: Prevalence, Attendance-Pressure Factors, and an Outline of a Model for Research. *Journal of Occupational and Environmental Medicine*, *47*, 958–966.
- Aronsson, G., Gustafsson, K., & Dallner, M. (2000). Sick but yet at work. An empirical study of sickness presenteeism. *Journal of Epidemiology & Community Health*, *54*, 502–509.
- Arslaner, E., & Boylu, Y. (2015). Presenteeism In Work Life&58; An Evaluation In Hotel Industry. *İşletme Araştırmaları Dergisi*, *7*, 123–136.
- Atz, U. (2013). Evaluating experience sampling of stress in a single-subject research design. *Personal and Ubiquitous Computing*, *17*, 639–652.
- Baeriswyl, S., Krause, A., Elfering, A., & Berset, M. (2017). How workload and coworker support relate to emotional exhaustion: The mediating role of sickness presenteeism. *International journal of stress management*, *24*, 52.
- Baker-McCleary, D., Greasley, K., Dale, J., & Griffith, F. (2010). Absence management and presenteeism: The pressures on employees to attend work and the impact of attendance on performance. *Human Resource Management Journal*, *47*, 958.
- Baltes, B. B., Briggs, T. E., Huff, J. W., Wright, J. A., & Neuman, G. A. (1999). Flexible and compressed workweek schedules: A meta-analysis of their effects on work-related criteria. *Journal of applied psychology*, *84*, 496–513.
- Bandura, A., & Walters, R. H. (1977). *Social learning theory*. (1st ed.): Prentice-hall Englewood Cliffs, NJ.
- Baron, S., & Linden, M. (2009). Disorders of functions and disorders of capacity in relation to sick leave in mental disorders. *International Journal of Social Psychiatry*, *55*, 57–63.
- Baum, T. (2012). Migrant workers in the international hotel industry.
- Baumeister, R. F., Bratslavsky, E., Finkenauer, C., & Vohs, K. D. (2001). Bad is stronger than good. *Review of general psychology*, *5*, 323.

- Beaton, D. E., Tang, K., Gignac, M. A. M., Lacaille, D., Badley, E. M., Anis, A. H., & Bombardier, C. (2010). Reliability, validity, and responsiveness of five at-work productivity measures in patients with rheumatoid arthritis or osteoarthritis. *Arthritis care & research*, *62*, 28–37.
- Bergström, G., Bodin, L., Hagberg, J., Aronsson, G., & Josephson, M. (2009a). Sickness presenteeism today, sickness absenteeism tomorrow? A prospective study on sickness presenteeism and future sickness absenteeism. *Journal of Occupational and Environmental Medicine*, *51*, 629–638.
- Bergström, G., Bodin, L., Hagberg, J., Lindh, T., Aronsson, G., & Josephson, M. (2009b). Does sickness presenteeism have an impact on future general health? *International archives of occupational and environmental health*, *82*, 1179–1190.
- Biron, C., & Saksvik, P. Ø. (2009). Sickness presenteeism and attendance pressure factors: Implications for practice. *International handbook of work and health psychology*, *3*.
- Block, G., Sternfeld, B., Block, C. H., Block, T. J., Norris, J., Hopkins, D., Quesenberry, C. P., Husson, G., & Clancy, H. A. (2008). Development of Alive! (A Lifestyle Intervention Via Email), and its effect on health-related quality of life, presenteeism, and other behavioral outcomes: Randomized controlled trial. *Journal of medical Internet research*, *10*, e43.
- Böckerman, P. (2018). Presenteeism in Economic Research. In C. L. Cooper, & L. Lu (Eds.), *Presenteeism at Work* (pp. 166–180). Cambridge: Cambridge University Press.
- Braakman-Jansen, L. M.A., Taal, E., Kuper, I. H., & van de Laar, Mart A. F. J. (2012). Productivity loss due to absenteeism and presenteeism in patients with Rheumatoid Arthritis (RA) and subjects without RA. *Rheumatology*, *51*, 354–361.
- Brockner, J., & Higgins, E. T. (2001). Regulatory focus theory: Implications for the study of emotions at work. *Organizational behavior and human decision processes*, *86*, 35–66.
- Brooks, A., Hagen, S. E., Sathyanarayanan, S., Schultz, A. B., & Edington, D. W. (2010). Presenteeism: Critical issues. *Journal of Occupational and Environmental Medicine*, *52*, 1055–1067.
- Brouwer, W. B.F., Koopmanschap, M. A., & Rutten, F. F.H. (1999). Productivity losses without absence: Measurement validation and empirical evidence. *Health Policy*, *48*, 13–27.
- Brown, H. E., Gilson, N. D., Burton, N. W., & Brown, W. J. (2011). Does physical activity impact on presenteeism and other indicators of workplace well-being? *Sports medicine (Auckland, N.Z.)*, *41*, 249–262.
- Burton, W. N., Chen, C.-Y., Conti, D. J., Schultz, A. B., & Edington, D. W. (2006). The association between health risk change and presenteeism change. *Journal of Occupational and Environmental Medicine*, *48*, 252–263.
- Burton, W. N., Chen, C.-Y., Li, X., Schultz, A. B., & Abrahamsson, H. (2014). The association of self-reported employee physical activity with metabolic syndrome, health care costs, absenteeism, and presenteeism. *Journal of Occupational and Environmental Medicine*, *56*, 919–926.
- Cancelliere, C., Cassidy, J. D., Ammendolia, C., & Côté, P. (2011). Are workplace health promotion programs effective at improving presenteeism in workers? A systematic review and best evidence synthesis of the literature. *BMC Public Health*, *11*, 395.
- Chambers, C., Frampton, C., & Barclay, M. (2017). Presenteeism in the New Zealand senior medical workforce—a mixed-methods analysis. *New Zealand Medical Journal*, *130*, 10–21.

- Chia, Y. M., & Chu, M. J.T. (2017). Presenteeism of hotel employees: Interaction effects of empowerment and hardiness. *International Journal of Contemporary Hospitality Management*, 29, 2592–2609.
- Cho, Y.-S., Park, J. B., Lee, K.-J., Min, K.-B., & Baek, C.-I. (2016). The association between Korean workers' presenteeism and psychosocial factors within workplaces. *Annals of occupational and environmental medicine*, 28, 41.
- Christian, M. S., Eisenkraft, N., & Kapadia, C. (2014). Dynamic Associations among Somatic Complaints, Human Energy, and Discretionary Behaviors. *Administrative Science Quarterly*, 60, 66–102.
- Cocker, F., Martin, A., Scott, J., Venn, A., & Sanderson, K. (2013). Psychological Distress, Related Work Attendance, and Productivity Loss in Small-to-Medium Enterprise Owner/Managers. *International Journal of Environmental Research and Public Health*, 10, 5062–5082.
- Collins, A. M., Cartwright, S., & Cowlshaw, S. (2018). Sickness presenteeism and sickness absence over time: A UK employee perspective. *Work & Stress*, 32, 68–83.
- Collins, J. J., Baase, C. M., Sharda, C. E., Ozminkowski, R. J., Nicholson, S., Billotti, G. M., Turpin, R. S., Olson, M., & Berger, M. L. (2005). The Assessment of Chronic Health Conditions on Work Performance, Absence, and Total Economic Impact for Employers. *Journal of Occupational and Environmental Medicine*, 47, 547–557.
- Cooper, C. (1996). Hot under the collar. *The Times 'Higher Education Supplement'*, June 21st, 21.
- Cooper, C. L., & Barling, J. (Eds.) (2008). *The Sage handbook of organizational behavior*, 1. London: Sage.
- Cooper, C. L., & Lu, L. (Eds.) (2018). *Presenteeism at Work*. Cambridge: Cambridge University Press.
- Côté, D., & Haccoun, R. R. (1991). L'absentéisme des femmes et des hommes: Une méta-analyse. *Canadian Journal of Administrative Sciences / Revue Canadienne des Sciences de l'Administration*, 8, 130–139.
- Coxe, S., West, S. G., & Aiken, L. S. (2009). The analysis of count data: A gentle introduction to poisson regression and its alternatives. *Journal of personality assessment*, 91, 121–136.
- Dababneh, A. J., Swanson, N., & Shell, R. L. (2001). Impact of added rest breaks on the productivity and well being of workers. *Ergonomics*, 44, 164–174.
- Deery, M., & Jago, L. (2009). A framework for work–life balance practices: Addressing the needs of the tourism industry. *Tourism and Hospitality Research*, 9, 97–108.
- Deery, S., Walsh, J., & Zatzick, C. D. (2014). A moderated mediation analysis of job demands, presenteeism, and absenteeism. *Journal of Occupational and Organizational Psychology*, 87, 352–369.
- Demerouti, E., Derks, D., Brummelhuis, L. L. ten, & Bakker, A. B. (2014). New Ways of Working: Impact on Working Conditions, Work–Family Balance, and Well-Being. In C. Korunka, & P. Hoonakker (Eds.), *The Impact of ICT on quality of working life* (pp. 123–141). Dordrecht: Springer.
- Demerouti, E., Le Blanc, Pascale M., Bakker, A. B., Schaufeli, W. B., & Hox, J. (2009). Present but sick: a three-wave study on job demands, presenteeism and burnout. *Career Development International*, 14, 50–68.

- Derks, D., van Mierlo, H., & Schmitz, E. B. (2014). A diary study on work-related smartphone use, psychological detachment and exhaustion: Examining the role of the perceived segmentation norm. *Journal of Occupational Health Psychology, 19*, 74–84.
- Dew, K., Keefe, V., & Small, K. (2005). 'Choosing' to work when sick: Workplace presenteeism. *Social science & medicine (1982), 60*, 2273–2282.
- Dhaini, S., Zúñiga, F., Ausserhofer, D., Simon, M., Kunz, R., Geest, S. de, & Schwendimann, R. (2016). Absenteeism and Presenteeism among Care Workers in Swiss Nursing Homes and Their Association with Psychosocial Work Environment: A Multi-Site Cross-Sectional Study. *Gerontology, 62*, 386–395.
- Dudenhöffer, S., Claus, M., Schöne, K., Letzel, S., & Rose, D.-M. (2016). Sickness presenteeism of German teachers: Prevalence and influencing factors. *Teachers and Teaching, 23*, 141–152.
- Đuranová, L., & Ohly, S. (2016). *Persistent work-related technology use, recovery and well-being processes: Focus on supplemental work after hours*. Cham, Heidelberg, New York, Dordrecht, London: Springer.
- Edwardson, C. L., Yates, T., Biddle, S. J. H., Davies, M. J., Dunstan, D. W., Esliger, D. W., Gray, L. J., Jackson, B., O'Connell, S. E., Waheed, G., & Munir, F. (2018). Effectiveness of the Stand More AT (SMaRT) Work intervention: Cluster randomised controlled trial. *BMJ (Clinical research ed.)*, *363*, k3870.
- Ekberg, K., Wåhlin, C., Persson, J., Bernfort, L., & Öberg, B. (2015). Early and late return to work after sick leave: predictors in a cohort of sick-listed individuals with common mental disorders. *Journal of Occupational Rehabilitation, 25*, 627–637.
- Ellis, B. B., & Mead, A. D. (2002). CHAPTER SIXTEEN. *Handbook of research methods in industrial and organizational psychology*, 324.
- Esposito, E., Wang, J. L., Williams, J. V. A., & Patten, S. B. (2007). Mood and anxiety disorders, the association with presenteeism in employed members of a general population sample. *Epidemiology and Psychiatric Sciences, 16*, 231–237.
- Eurofound, I. L.O. (2012). *5th European Working Conditions Survey*: Publications Office of the European Union.
- Eurofound, I. L.O. (2017). *Working anytime, anywhere: The effects on the world of work*. Luxembourg, Geneva: Publications Office; International Labour Office.
- Evans-Lacko, S., & Knapp, M. (2016). Global patterns of workplace productivity for people with depression: Absenteeism and presenteeism costs across eight diverse countries. *Social Psychiatry and Psychiatric Epidemiology, 51*, 1525–1537.
- Ferreira, A. I. (2018). Presenteeism, Burnout and Health. In C. L. Cooper, & L. Lu (Eds.), *Presenteeism at Work* (pp. 219–240). Cambridge: Cambridge University Press.
- Ferreira, A. I., da Costa Ferreira, P., Cooper, C. L., & Oliveira, D. (2018). How daily negative affect and emotional exhaustion correlates with work engagement and presenteeism-constrained productivity. *International journal of stress management*.
- Ferreira, A. I., Mach, M., Martinez, L. F., Brewster, C., Dagher, G., Perez-Nebra, A., & Lisovskaya, A. (2017). Working sick and out of sorts: A cross-cultural approach on presenteeism climate, organizational justice and work–family conflict. *The International Journal of Human Resource Management, 82*, 1–23.

- Ferreira, A. I., & Martinez, L. F. (2012). Presenteeism and burnout among teachers in public and private Portuguese elementary schools. *The International Journal of Human Resource Management*, 23, 4380–4390.
- Ferreira, A. I., Martinez, L. F., Cooper, C., & Gui, D. M. (2015). LMX as a negative predictor of presenteeism climate: a cross-cultural study in the financial and health sectors. *Journal of Organizational Effectiveness: People and Performance*, 2, 282–302.
- Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, 7, 117–140.
- Flecker, J., Fibich, T., & Kraemer, K. (2017). Socio-economic changes and the reorganization of work. In C. Korunka, & B. Kubicek (Eds.), *Job Demands in a Changing World of Work* (pp. 7–24). Cham: Springer International Publishing.
- Gajendran, R. S., & Harrison, D. A. (2007). The good, the bad, and the unknown about telecommuting: Meta-analysis of psychological mediators and individual consequences. *Journal of applied psychology*, 92, 1524–1541.
- Garrow, V. (2016). Presenteeism: A review of current thinking. *Brighton, United Kingdom: Institute of Employment Studies*.
- George, R., Chiba, M., & Scheepers, C. B. (2017). An investigation into the effect of leadership style on stress-related presenteeism in South African knowledge workers. *SA Journal of Human Resource Management*, 15, 1–13.
- Gerdenitsch, C. (2017). New Ways of Working and Satisfaction of Psychological Needs. In C. Korunka, & B. Kubicek (Eds.), *Job Demands in a Changing World of Work* (pp. 91–109). Cham: Springer International Publishing.
- Gerich, J. (2015). Sick at work: Methodological problems with research on workplace presenteeism. *Health Services and Outcomes Research Methodology*, 15, 37–53.
- Gerich, J. (2016). Determinants of presenteeism prevalence and propensity: Two sides of the same coin? *Archives of environmental & occupational health*, 71, 189–198.
- Giæver, F., Lohmann-Lafrenz, S., & Løvseth, L. T. (2016). Why hospital physicians attend work while ill? The spiralling effect of positive and negative factors. *BMC health services research*, 16, 548.
- Gilbreath, B., & Karimi, L. (2012). Supervisor behavior and employee presenteeism. *International Journal of leadership studies*, 7, 114–131.
- Goetzel, R. Z., Carls, G. S., Wang, S., Kelly, E., Mauceri, E., Columbus, D., & Cavuoti, A. (2009). The relationship between modifiable health risk factors and medical expenditures, absenteeism, short-term disability, and presenteeism among employees at novartis. *Journal of Occupational and Environmental Medicine*, 51, 487–499.
- Goetzel, R. Z., Long, S. R., Ozminkowski, R. J., Hawkins, K., Wang, S., & Lynch, W. (2004). Health, Absence, Disability, and Presenteeism Cost Estimates of Certain Physical and Mental Health Conditions Affecting U.S. Employers. *Journal of Occupational and Environmental Medicine*, 46, 398–412.
- Goyal, A., Singh, S., Vir, D., & Pershad, D. (2016). Automation of Stress Recognition Using Subjective or Objective Measures. *Psychological Studies*, 61, 348–364.
- Hägerbäumer, M. (2017). *Risikofaktor Präsentismus: Hintergründe und Auswirkungen des Arbeitens trotz Krankheit*: Springer-Verlag.

- Hagqvist, E., Toivanen, S., & Vinberg, S. (2017). Time strain among employed and self-employed women and men in Sweden. *Society, Health & Vulnerability*, 6, 29183.
- Halbesleben, J. R.B., Whitman, M. V., & Crawford, W. S. (2014). A dialectical theory of the decision to go to work: Bringing together absenteeism and presenteeism. *Human Resource Management Review*, 24, 177–192.
- Halonen, J. I., Solovieva, S., Pentti, J., Kivimäki, M., Vahtera, J., & Viikari-Juntura, E. (2016). Effectiveness of legislative changes obligating notification of prolonged sickness absence and assessment of remaining work ability on return to work and work participation: a natural experiment in Finland. *Occup Environ Med*, 73, 42–50.
- Hansen, C. D., & Andersen, J. H. (2008). Going ill to work--what personal circumstances, attitudes and work-related factors are associated with sickness presenteeism? *Social science & medicine (1982)*, 67, 956–964.
- Harrison, D. A., & Martocchio, J. J. (1998). Time for absenteeism: A 20-year review of origins, offshoots, and outcomes. *Journal of Management*, 24, 305–350.
- Hertel, G., Stone, D. L., Johnson, R. D., & Passmore, J. (2017). The Psychology of the Internet @ Work. In G. Hertel, D. L. Stone, R. D. Johnson, & J. Passmore (Eds.), *The Wiley Blackwell handbook of the psychology of the Internet at work*. (pp. 1–18). Hoboken, NJ: John Wiley & Sons, Ltd.
- Hesketh, I., & Cooper, C. L. (2014). Leaveism at work. *Occupational medicine (Oxford, England)*, 64, 146–147.
- Hofstede, G. (2011). Dimensionalizing cultures: The Hofstede model in context. *Online readings in psychology and culture*, 2, 1–26.
- Holland, P., & Collins, A. M. (2018). "Whenever I can I push myself to go to work": A qualitative study of experiences of sickness presenteeism among workers with rheumatoid arthritis. *Disability and rehabilitation*, 40, 404–413.
- House, R. J., Hanges, P. J., Javidan, M., Dorfman, P. W., & Gupta, V. (2004). *Culture, leadership, and organizations: The GLOBE study of 62 societies*: Sage publications.
- Hunter, K., Mahfooz A. Ansari, & Jayasingam, S. (2013). Social Influence Tactics and Influence Outcomes: The Role of Leader-Member Exchange and Culture. *28th annual meeting of the Society for Industrial & Organizational Psychology (SIOP)*, 1–24.
- Irvine, A. (2011). Fit for Work?: The Influence of Sick Pay and Job Flexibility on Sickness Absence and Implications for Presenteeism. *Social Policy & Administration*, 45, 752–769.
- Iverson, D., Lewis, K. L., Caputi, P., & Knospe, S. (2010). The cumulative impact and associated costs of multiple health conditions on employee productivity. *Journal of Occupational and Environmental Medicine*, 52, 1206–1211.
- Janssens, H., Clays, E., Clercq, B. de, Bacquer, D. de, & Braeckman, L. (2013). The Relation between Presenteeism and Different Types of Future Sickness Absence. *Journal of occupational health*, 55, 132–141.
- Jeffrey Hill, E., Grzywacz, J. G., Allen, S., Blanchard, V. L., Matz-Costa, C., Shulkin, S., & Pitt-Catsoupes, M. (2008). Defining and conceptualizing workplace flexibility. *Community, Work & Family*, 11, 149–163.

- Johansen, V. (2018). Motives for sickness presence among students at secondary school: A cross-sectional study in five European countries. *BMJ Open*, *8*, 1-7.
- Johansen, V., Aronsson, G., & Marklund, S. (2014). Positive and negative reasons for sickness presenteeism in Norway and Sweden: A cross-sectional survey. *BMJ Open*, *4*, 1-6.
- Johns, G. (1997). Contemporary research on absence from work: Correlates, causes and consequences. *International review of industrial and organizational psychology*, *12*, 115–174.
- Johns, G. (2008). Absenteeism and presenteeism: Not at work or not working well. In C. L. Cooper, & J. Barling (Eds.), *The Sage handbook of organizational behavior* (pp. 160–177). London: Sage.
- Johns, G. (2010). Presenteeism in the workplace: A review and research agenda. *Journal of Organizational Behavior*, *31*, 519–542.
- Johns, G. (2011). Attendance dynamics at work: The antecedents and correlates of presenteeism, absenteeism, and productivity loss. *Journal of Occupational Health Psychology*, *16*, 483–500.
- Johns, G. (2012). Presenteeism: A Short History and a Cautionary Tale. In J. Houdmont, S. Leka, & R. R. Sinclair (Eds.), *Contemporary occupational health psychology: Global perspectives on research and practice* (pp. 204–220). Chichester, United Kingdom: Wiley-Blackwell.
- Johns, G., & Al Hajj, R. (2016). Frequency versus time lost measures of absenteeism: Is the voluntariness distinction an urban legend? *Journal of Organizational Behavior*, *37*, 456–479.
- Johns, G., & Nicholson, N. (1982). The meanings of absence-new strategies for theory and research. *Research in organizational behavior*, *4*, 127–172.
- Kaiser, C. P. (2018). Absenteeism, presenteeism, and workplace climate: A taxonomy of employee attendance behaviors. *Economics & Business Journal: Inquiries & Perspectives*, *9*, 69–86.
- Karanika-Murray, M., & Biron, C. (2019). The health-performance framework of presenteeism: Towards understanding an adaptive behaviour. *Human Relations*.
- Karanika-Murray, M., & Cooper, C. (2018). Presenteeism: An introduction to a prevailing global phenomenon. In C. L. Cooper, & L. Lu (Eds.), *Presenteeism at Work* (pp. 9–34). Cambridge: Cambridge University Press.
- Karanika-Murray, M., Pontes, H. M., Griffiths, M. D., & Biron, C. (2015). Sickness presenteeism determines job satisfaction via affective-motivational states. *Social science & medicine (1982)*, *139*, 100–106.
- Kelliher, C., & Anderson, D. (2010). Doing more with less? Flexible working practices and the intensification of work. *Human Relations*, *63*, 83–106.
- Kessler, R. C., Ames, M., Hymel, P. A., Loeppke, R., McKenas, D. K., Richling, D. E., Stang, P. E., & Ustun, T. B. (2004). Using the World Health Organization Health and Work Performance Questionnaire (HPQ) to Evaluate the Indirect Workplace Costs of Illness. *Journal of Occupational and Environmental Medicine*, *46*, 23-S37.
- Kigozi, J., Jowett, S., Lewis, M., Barton, P., & Coast, J. (2017). The estimation and inclusion of presenteeism costs in applied economic evaluation: a systematic review. *Value in Health*, *20*, 496–506.
- Kim, J., Suh, E. E., Ju, S., Choo, H., Bae, H., & Choi, H. (2016). Sickness Experiences of Korean Registered Nurses at Work: A Qualitative Study on Presenteeism. *Asian nursing research*, *10*, 32–38.

- Kinman, G., & Wray, S. (2018). Presenteeism in academic employees-occupational and individual factors. *Occupational medicine (Oxford, England)*, *68*, 46–50.
- Knani, M., Biron, C., & Fournier, P.-S. (2018). Presenteeism: A critical review of the literature. In C. L. Cooper, & L. Lu (Eds.), *Presenteeism at Work* (pp. 35–68). Cambridge: Cambridge University Press.
- Köhler, U., Syrek, C., & Röltgen, A. (2017). Praxisbericht: Konzept zur Pilotierung der Arbeitswelt 4.0. *Gruppe. Interaktion. Organisation. Zeitschrift für Angewandte Organisationspsychologie (GIO)*, *48*, 259–262.
- Koopman, C., Pelletier, K. R., Murray, J. F., Sharda, C. E., Berger, M. L., Turpin, R. S., Hackleman, P., Gibson, P., Holmes, D. M., & Bendel, T. (2002). Stanford presenteeism scale: Health status and employee productivity. *Journal of Occupational and Environmental Medicine*, *44*, 14–20.
- Korunka, C., & Kubicek, B. (2017). Job demands in a changing world of work. In C. Korunka, & B. Kubicek (Eds.), *Job Demands in a Changing World of Work* (pp. 1–5). Cham: Springer International Publishing.
- Krane, L., Larsen, E. L., Nielsen, C. V., Stapelfeldt, C. M., Johnsen, R., & Risør, M. B. (2014). Attitudes towards sickness absence and sickness presenteeism in health and care sectors in Norway and Denmark: A qualitative study. *BMC Public Health*, *14*, 880–893.
- Kuoppala, J., Lamminpää, A., Liira, J., & Vainio, H. (2008). Leadership, job well-being, and health effects—a systematic review and a meta-analysis. *Journal of Occupational and Environmental Medicine*, *50*, 904–915.
- Leineweber, C., Westerlund, H., Hagberg, J., Svedberg, P., Luukkala, M., & Alexanderson, K. (2011). Sickness Presenteeism Among Swedish Police Officers. *Journal of Occupational Rehabilitation*, *21*, 17–22.
- Lerner, D., Adler, D. A., Chang, H., Lapitsky, L., Hood, M. Y., Perissinotto, C., Reed, J., McLaughlin, T. J., Berndt, E. R., & Rogers, W. H. (2004). Unemployment, job retention, and productivity loss among employees with depression. *Psychiatric services (Washington, D.C.)*, *55*, 1371–1378.
- Lerner, D., Adler, D. A., Rogers, W. H., Chang, H., Greenhill, A., Cymerman, E., & Azocar, F. (2015). A randomized clinical trial of a telephone depression intervention to reduce employee presenteeism and absenteeism. *Psychiatric services (Washington, D.C.)*, *66*, 570–577.
- Lerner, D., Amick III, B. C., Rogers, W. H., Malspeis, S., Bungay, K., & Cynn, D. (2001). The work limitations questionnaire. *Medical care*, *39*, 72–85.
- Liu, Y., Mo, S., Song, Y., & Wang, M. (2016). Longitudinal Analysis in Occupational Health Psychology: A Review and Tutorial of Three Longitudinal Modeling Techniques. *Applied Psychology*, *65*, 379–411.
- Lofland, J. H., Pizzi, L., & Frick, K. D. (2004). A Review of Health-Related Workplace Productivity Loss Instruments. *Pharmacoeconomics*, *22*, 165–184.
- Lohaus, D., & Habermann, W. (2019). Presenteeism: A review and research directions. *Human Resource Management Review*, *29*, 43–58.
- Løkke Nielsen, A.-K. (2008). Determinants of absenteeism in public organizations: a unit-level analysis of work absence in a large Danish municipality. *The International Journal of Human Resource Management*, *19*, 1330–1348.

- Lu, L., & Kao, S.-F. (2018). Understanding the excessive availability for work in the Confucian Asia: Interactions between sociocultural forces and personal drives. In C. L. Cooper, & L. Lu (Eds.), *Presenteeism at Work* (pp. 69–94). Cambridge: Cambridge University Press.
- Lu, L., Lin, H. Y., & Cooper, C. L. (2013). Unhealthy and present: Motives and consequences of the act of presenteeism among Taiwanese employees. *Journal of Occupational Health Psychology, 18*, 406–416.
- Ma, J., Meltzer, D. P., Yang, L. Q., & Liu, C. (2018). Motivation and presenteeism: The whys and whats. In C. Cooper, & L. Lu (Eds.), *Presenteeism at work* (pp. 97–122). Cambridge: Cambridge University Press.
- Mach, M., Ferreira, A. I., Martinez, L. F., Lisowskaia, A., Dagher, G. K., & Perez-Nebra, A. R. (2018). Working conditions in hospitals revisited: A moderated-mediated model of job context and presenteeism. *PloS one, 13*, 1-15.
- Martinez, L. F., & Ferreira, A. I. (2012). Sick at work: Presenteeism among nurses in a Portuguese public hospital. *Stress and health journal of the International Society for the Investigation of Stress, 28*, 297–304.
- Martinez, L. F., Ferreira, A. I., & Nunes, T. A. M. (2018). Presenteeism and work-family/family-work conflict: A cross-cultural approach with two Latin countries. In C. L. Cooper, & L. Lu (Eds.), *Presenteeism at Work* (pp. 257–285). Cambridge: Cambridge University Press.
- Mascarenhas, S., Dias, J., Prada, R., & Paiva, A. (2010). A Dimensional Model for Cultural Behavior in Virtual Agents. *Applied Artificial Intelligence, 24*, 552–574.
- Matke, S., Balakrishnan, A., Bergamo, G., & Newberry, S. J. (2007). A review of methods to measure health-related productivity loss. *American Journal of Managed Care, 13*, 211–220.
- McGregor, A., Magee, C. A., Caputi, P., & Iverson, D. (2016). A job demands-resources approach to presenteeism. *Career Development International, 21*, 402–418.
- McGregor, A., Sharma, R., Magee, C., Caputi, P., & Iverson, D. (2018). Explaining variations in the findings of presenteeism research: A meta-analytic investigation into the moderating effects of construct operationalizations and chronic health. *Journal of Occupational Health Psychology, 23*, 584–601.
- McKevitt, C., Morgan, M., Dundas, R., & Holland, W. W. (1997). Sickness absence and 'working through' illness: A comparison of two professional groups. *Journal of Public Health, 19*, 295–300.
- Meerding, W. J., IJzelenberg, W., Koopmanschap, M. A., Severens, H. J. L., & Burdorf, A. (2005). Health problems lead to considerable productivity loss at work among workers with high physical load jobs. *Journal of clinical epidemiology, 58*, 517–523.
- Michishita, R., Jiang, Y., Ariyoshi, D., Yoshida, M., Moriyama, H., Obata, Y., Nagata, M., Nagata, T., Mori, K., & Yamato, H. (2017). The Introduction of an Active Rest Program by Workplace Units Improved the Workplace Vigor and Presenteeism Among Workers: A Randomized Controlled Trial. *Journal of Occupational and Environmental Medicine, 59*, 1140–1147.
- Miraglia, M., & Johns, G. (2016). Going to work ill: A meta-analysis of the correlates of presenteeism and a dual-path model. *Journal of Occupational Health Psychology, 21*, 261–283.
- Miraglia, M., & Kinman, G. (2017). The hidden costs of working when sick. *The Psychologist, 30*, 36–40.

- Muschalla, B. (2016). Work-related anxieties and work-place phobia: a topical phenomenon at the interface of clinical and organizational research and practice. In M. Wiencke, M. Cacace, & S. Fischer (Eds.), *Healthy at Work* (pp. 41–56): Springer.
- Muschalla, B., & Linden, M. (2009). Workplace phobia—a first explorative study on its relation to established anxiety disorders, sick leave, and work-directed treatment. *Psychology, Health & Medicine, 14*, 591–605.
- Navarro, A., Salas-Nicás, S., Moncada, S., Llorens, C., & Molinero-Ruiz, E. (2018). Prevalence, associated factors and reasons for sickness presenteeism: A cross-sectional nationally representative study of salaried workers in Spain, 2016. *BMJ Open, 8*, e021212.
- Ng, T. W. H., & Feldman, D. C. (2008). The relationship of age to ten dimensions of job performance. *The Journal of applied psychology, 93*, 392–423.
- Ng, T. W. H., & Feldman, D. C. (2009). HOW BROADLY DOES EDUCATION CONTRIBUTE TO JOB PERFORMANCE? *Personnel Psychology, 62*, 89–134.
- Ng, T. W. H., & Feldman, D. C. (2010). Organizational Tenure and Job Performance. *Journal of Management, 36*, 1220–1250.
- Nielsen, K., Yarker, J., Munir, F., & Bültmann, U. (2018). IGLOO: An integrated framework for sustainable return to work in workers with common mental disorders. *Work & Stress, 32*, 400–417.
- Nijp, H. H., Beckers, D. G. J., Geurts, S. A. E., Tucker, P., & Kompier, M. A. J. (2012). Systematic review on the association between employee worktime control and work-non-work balance, health and well-being, and job-related outcomes. *Scandinavian journal of work, environment & health, 38*, 299–313.
- Niven, K., & Ciborowska, N. (2015). The hidden dangers of attending work while unwell: A survey study of presenteeism among pharmacists. *International journal of stress management, 22*, 207–221.
- Nordenmark, M., Hagqvist, E., & Vinberg, S. (2019). Sickness presenteeism among self-employed and employed in northwestern europe – the importance of time demands. *Safety and Health at Work, 1–5*.
- Ohly, S., Sonnentag, S., Niessen, C., & Zapf, D. (2010). Diary studies in organizational research. *Journal of Personnel Psychology, 9*, 79–93.
- Ospina, M. B., Dennett, L., Wayne, A., Jacobs, P., & Thompson, A. H. (2015). A systematic review of measurement properties of instruments assessing presenteeism. *American Journal of Managed Care, 21*, e171-e185.
- Paškvan, M., & Kubicek, B. (2017). The Intensification of Work. In C. Korunka, & B. Kubicek (Eds.), *Job Demands in a Changing World of Work* (pp. 25–44). Cham: Springer International Publishing.
- Patton, E., & Johns, G. (Eds.) (2015). *Social Policy, Time Use, Economics, and National Values: A Meta-Analysis of Gender and Absence, 1*: Academy of Management Briarcliff Manor, NY 10510.
- Pauly, M. V., Nicholson, S., Polsky, D., Berger, M. L., & Sharda, C. (2008). Valuing reductions in on-the-job illness: 'presenteeism' from managerial and economic perspectives. *Health economics, 17*, 469–485.
- Peters, P., Poutsma, E., van der Heijden, B. I. J. M., Bakker, A. B., & Bruijn, T. d. (2014). Enjoying New Ways to Work: An HRM-Process Approach to Study Flow. *Human Resource Management, 53*, 271–290.

- Pfeffer, J. (2010). Building Sustainable Organizations: The Human Factor. *Academy of Management Perspectives*, 24, 34–45.
- Pohling, R., Buruck, G., Jungbauer, K.-L., & Leiter, M. P. (2016). Work-related factors of presenteeism: The mediating role of mental and physical health. *Journal of Occupational Health Psychology*, 21, 220.
- Prada, R., & Paiva, A. (2009). Teaming up humans with autonomous synthetic characters. *Artificial Intelligence*, 173, 80–103.
- Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods*: Sage.
- Rice, R. E. (2017). Boundaries, and Information and Communication Technologies. In G. Hertel, D. L. Stone, R. D. Johnson, & J. Passmore (Eds.), *The Wiley Blackwell handbook of the psychology of the Internet at work*. (pp. 175–194). Hoboken, NJ: John Wiley & Sons, Ltd.
- Robertson, I., & Cooper, C. (2011). *Well-being: Productivity and happiness at work*: Springer.
- Rostad, I. S., Fridner, A., Sendén, M. G., & Løvseth, L. T. (2017). Paid Sick Leave as a Means to Reduce Sickness Presenteeism Among Physicians. *Nordic Journal of Working Life Studies*, 7, 71–85.
- Rostad, I. S., Milch, V., & Saksvik, P. Ø. (2015). Psychosocial workplace factors associated with sickness presenteeism, sickness absenteeism, and long-term health in a Norwegian industrial company. *Scandinavian Psychologist*, 2.
- Rothermund, E., Gündel, H., Rottler, E., Hölzer, M., Mayer, D., Rieger, M., & Kilian, R. (2016). Effectiveness of psychotherapeutic consultation in the workplace: a controlled observational trial. *BMC Public Health*, 16, 891–903.
- Rousculp, M. D., Johnston, S. S., Palmer, L. A., Chu, B.-C., Mahadevia, P. J., & Nichol, K. L. (2010). Attending work while sick: Implication of flexible sick leave policies. *Journal of Occupational and Environmental Medicine*, 52, 1009–1013.
- Ruhle, S. A., & Süß, S. (2019). Presenteeism and Absenteeism at Work—an Analysis of Archetypes of Sickness Attendance Cultures. *Journal of Business and Psychology*, 1–15.
- Saksvik, P. Ø. (1996). Attendance pressure during organizational change. *International journal of stress management*, 3, 47–59.
- Salancik, G. R., & Pfeffer, J. (1978). A social information processing approach to job attitudes and task design. *Administrative Science Quarterly*, 23, 224–253.
- Sanderson, K., Tilse, E., Nicholson, J., Oldenburg, B., & Graves, N. (2007). Which presenteeism measures are more sensitive to depression and anxiety? *Journal of affective disorders*, 101, 65–74.
- Schmid, J. A., Jarczok, M. N., Sonntag, D., Herr, R. M., Fischer, J. E., & Schmidt, B. (2017). Associations Between Supportive Leadership Behavior and the Costs of Absenteeism and Presenteeism: An Epidemiological and Economic Approach. *Journal of Occupational and Environmental Medicine*, 59, 141–147.
- Schnittker, J., & Bacak, V. (2014). The increasing predictive validity of self-rated health. *PloS one*, 9, e84933.
- Schultz, A. B., Chen, C.-Y., & Edington, D. W. (2009). The Cost and Impact of Health Conditions on Presenteeism to Employers. *Pharmacoeconomics*, 27, 365–378.

- Schultz, A. B., & Edington, D. W. (2007). Employee Health and Presenteeism: A Systematic Review. *Journal of Occupational Rehabilitation, 17*, 547–579.
- Schulz, H., Zacher, H., & Lippke, S. (2017). The importance of team health climate for health-related outcomes of white-collar workers. *Frontiers in psychology, 8*.
- Schwarz, N., Hippler, H.-J., Deutsch, B., & Strack, F. (1985). Response Scales: Effects of Category Range on Reported Behavior and Comparative Judgments. *Public Opinion Quarterly, 49*, 388.
- Sherif, M. (1936). *The psychology of social norms*. (1st ed.). Oxford.
- Shikiar, R., Halpern, M. T., Rentz, A. M., & Khan, Z. M. (2004). Development of the Health and Work Questionnaire (HWQ): An instrument for assessing workplace productivity in relation to worker health. *Work, 22*, 219–229.
- Simpson, R. (1998). Presenteeism, Power and Organizational Change: Long Hours as a Career Barrier and the Impact on the Working Lives of Women Managers. *British Journal of Management, 9*, 37–50.
- Skagen, K., & Collins, A. M. (2016). The consequences of sickness presenteeism on health and wellbeing over time: A systematic review. *Social science & medicine (1982), 161*, 169–177.
- Skakon, J., Nielsen, K., Borg, V., & Guzman, J. (2010). Are leaders' well-being, behaviours and style associated with the affective well-being of their employees? A systematic review of three decades of research. *Work & Stress, 24*, 107–139.
- Spector, P. E. (2019). Do Not Cross Me: Optimizing the Use of Cross-Sectional Designs. *Journal of Business and Psychology, 34*, 1–13.
- Steinke, M., & Badura, B. (2011). *Präsentismus: Ein Review zum Stand der Forschung*. Dortmund, Berlin, Dresden: Baua, Bundesanstalt für Arbeitsschutz und Arbeitsmedizin.
- Strasser, P., Varesco-Kager, N., & Häberli, D. (2017). Echtzeiterhebung von Präsentismus mit der App now@ work—ein Praxisbericht. *Journal Psychologie des Alltagshandelns, 10*, 36–50.
- Strömberg, C., Aboagye, E., Hagberg, J., Bergström, G., & Lohela-Karlsson, M. (2017). Estimating the Effect and Economic Impact of Absenteeism, Presenteeism, and Work Environment-Related Problems on Reductions in Productivity from a Managerial Perspective. *Value in health the journal of the International Society for Pharmacoeconomics and Outcomes Research, 20*, 1058–1064.
- Tajfel, H., & Turner, J. (1986). JC (1986). The social identity theory of intergroup behavior. *Psychology of intergroup relations, 7–24*.
- Thompson, A. H., & Wayne, A. (2018). Agreement among the Productivity Components of Eight Presenteeism Tests in a Sample of Health Care Workers. *Value in health the journal of the International Society for Pharmacoeconomics and Outcomes Research, 21*, 650–657.
- Uhl-Bien, M. (2011). Relational leadership theory: Exploring the social processes of leadership and organizing. In P. H. Werhane, & M. Painter-Morland (Eds.), *Leadership, gender, and organization* (pp. 75–108). Dordrecht, Heidelberg, London, New York: Springer.
- van den Broeck, A., Ferris, D. L., Chang, C.-H., & Rosen, C. C. (2016). A review of self-determination theory's basic psychological needs at work. *Journal of Management, 42*, 1195–1229.

- van Rooijen, L., Essink-bot, M.-L., Koopmanschap, M. A., Bonsel, G., & Rutten, F. F. H. (1996). Labor and Health Status in Economic Evaluation of Health Care: The Health and Labor Questionnaire. *International Journal of Technology Assessment in Health Care*, *12*, 405–415.
- Vingård, E., Alexanderson, K., & Norlund, A. (2004). Sickness presence. *Scandinavian journal of public health*, *63*, 216–221.
- Vries, H. J. de, Brouwer, S., Groothoff, J. W., Geertzen, J. H. B., & Reneman, M. F. (2011). Staying at work with chronic nonspecific musculoskeletal pain: A qualitative study of workers' experiences. *BMC musculoskeletal disorders*, *12*, 126.
- Vries, H. J. de, Reneman, M. F., Groothoff, J. W., Geertzen, J. H. B., & Brouwer, S. (2012). Workers Who Stay at Work Despite Chronic Nonspecific Musculoskeletal Pain: Do They Differ from Workers with Sick Leave? *Journal of Occupational Rehabilitation*, *22*, 489–502.
- Waddell, G., & Burton, A. K. (2006). *Is work good for your health and well-being?: The Stationery Office*.
- Wang, Y., Chen, C.-C., & Fosh, P. (2018a). Presenteeism in the Chinese work context. In C. L. Cooper, & L. Lu (Eds.), *Presenteeism at Work* (pp. 286–311). Cambridge: Cambridge University Press.
- Wang, Y., Chen, C.-C., Lu, L., Eisenberger, R., & Fosh, P. (2018b). Effects of leader–member exchange and workload on presenteeism. *Journal of Managerial Psychology*, *33*, 511–523.
- Whysall, Z., Bowden, J., & Hewitt, M. (2018). Sickness presenteeism: measurement and management challenges. *Ergonomics*, *61*, 341–354.
- Widera, E., Chang, A., & Chen, H. L. (2010). Presenteeism: a public health hazard. *Journal of general internal medicine*, *25*, 1244–1247.
- Yang, T., Shen, Y.-M., Zhu, M., Liu, Y., Deng, J., Chen, Q., & See, L.-C. (2016a). Effects of Co-Worker and Supervisor Support on Job Stress and Presenteeism in an Aging Workforce: A Structural Equation Modelling Approach. *International Journal of Environmental Research and Public Health*, *13*, 72.
- Yang, T., Zhu, M., & Xie, X. (2016b). The determinants of presenteeism: A comprehensive investigation of stress-related factors at work, health, and individual factors among the aging workforce. *Journal of occupational health*, *58*, 25–35.
- Zacher, H., & Schulz, H. (2015). Employees' eldercare demands, strain, and perceived support. *Journal of Managerial Psychology*, *30*, 183–198.
- Zhang, W., Gignac, M. A. M., Beaton, D., Tang, K., & Anis, A. H. (2010). Productivity loss due to presenteeism among patients with arthritis: Estimates from 4 instruments. *The Journal of rheumatology*, *37*, 1805–1814.
- Zhang, W., Sun, H., Woodcock, S., & Anis, A. (2015). Illness related wage and productivity losses: Valuing 'presenteeism'. *Social science & medicine (1982)*, *147*, 62–71.
- Zhou, Q., Martinez, L. F., Ferreira, A. I., & Rodrigues, P. (2016). Supervisor support, role ambiguity and productivity associated with presenteeism: A longitudinal study. *Journal of Business Research*, *69*, 3380–3387.

Table 1 – Recommendations for future research on presenteeism

Main Topic	Section	Future research on presenteeism should...
<i>Concept</i>	1	... recognize the basic understanding of presenteeism as the behaviour of working when ill.
	2	... investigate the long-term and short-term functional and dysfunctional effects of presenteeism.
	3	... incorporate a process perspective that focuses on individuals and their experiences.
<i>Measurement</i>	4	... carefully consider how to measure presenteeism based on plausible assumptions.
	5	... carefully consider how to value and estimate productivity loss attributable to presenteeism.
	6	... widen its methodology to include longitudinal designs to overcome current shortcomings.
	7	... carefully consider a rigorous methodology when planning an intervention on presenteeism.
<i>Social Context</i>	8	... incorporate a social perspective on the formation of presenteeism.
	9	... consider the specific occupational and sectoral context in the formation of presenteeism.
	10	... include the broader cultural context in the formation of presenteeism.
	11	... reflect contemporary changes in the workplace in the formation of presenteeism.

Table 2 – Types of single-item measures of presenteeism

Content	Measurement examples	Response format	Recall period
Presenteeism, without evaluation (e.g., Demerouti et al., 2009)	Has it happened that you have...	Yes / No	12 months
	How many times /days have you	Number of days	6 months
	... gone to work despite feeling sick?	Number of times with given response format	3 months
		Relative response format (never to very often)	4 weeks 1 week
Presenteeism, dysfunctional (e.g., Aronsson et al., 2000a)	Has it happened that you have...	Number of times with given response format / open response field	Lifetime 12 months
	How many times / days have you...	Number of days	6 months
	... gone to work despite feeling that you really should have taken sick leave due to your state of health?	Relative response format (seldom to always)	1 week
Presenteeism, forced (e.g., Lu et al., 2013)	Have you experienced ...	Number of times with given response format	12 months
	1. Although you feel sick, you still force yourself to go to work. 2. Although you have physical symptoms such as headache or backache, you still force yourself to go to work.”		6 months