The impact of the COVID-19 pandemic on momentary burnout and the influence of daily work-home interference

Kruizinga, T.T.

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Master Thesis

The impact of the COVID-19 pandemic on momentary burnout and the influence of daily work-home interference

Department of Industrial Engineering and Innovation Science
Human Performance Management Group

T.T. Kruizinga
0942963

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Supervisors:
Dr. Leander van der Meij, TU/e, HPM
Dr. Karin Smolders, TU/e, HTI

Preface

Finishing this master thesis report marks the end of my master studies Operations Management & Logistics at the Eindhoven University of Technology. While reflecting on the journey that has led to this milestone, I realized that I could not have done it without the help, support, and love of some people. Therefore, I would like to thank them.

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Abstract

This study examined the effect of daily Work-Home Interference (WHI) on momentary and daily burnout complaints in a sample of employees from various occupations, during the corona pandemic. It was hypothesized that high levels of daily WHI were related to higher levels of daily burnout. Moreover, it was hypothesized that the relationship between daily WHI and daily burnout was stronger for employed women and for employees who worked from home. Furthermore, it was hypothesized that women and individuals with high levels of WHI reported a stronger increase in momentary burnout during the day. A one-day self-reported diary study was conducted over two weeks, with seven measurements during the day of the experiment. The final sample size contained 96 participants, resulting in 96 daily measurements and a total of 491 momentary measurements that were obtained. The results showed that daily Family Interfering with Work (FIW) was unrelated to daily exhaustion in women however, in men, more daily FIW was related to more daily exhaustion, which was opposite to the expectations. Moreover, no support was found for the moderating effect of gender between the relationship of daily Work Interfering with Family (WIF) and daily burnout and the relationship between daily WIF and daily disengagement. Furthermore, the results showed no moderating effect of working from home on the relationship between daily WHI and burnout. The results of the multi-level analysis showed that women and individuals with high levels of FIW did not report a stronger increase in momentary burnout. Furthermore, individuals with high levels of WIF did not report a stronger increase in momentary disengagement. However, the results did show that individuals with high levels of WIF experienced a stronger increase in momentary exhaustion throughout the workday. This study contributes to longitudinal and cross-sectional burnout and Work-Home Interference studies by extending the insights on the relationships on a momentary and daily level. Additionally, this study contributes to the literature by analyzing the moment-to-moment changes in burnout complaints during the day, allowing for insights into the gradual development of burnout and may aid in untangling this phenomenon. Furthermore, it emphasizes the dysfunctional and hazardous effect of Work-Home Interference and encourages further investigation of the changes in momentary and daily burnout.

Contents

1. Introduction

The number of employees that experience burnout complaints increased consistently over time. A recently conducted study showed that in 2019 17 percent of the Dutch working population experienced burnout complaints at least a few times per month (CBS & TNO, 2020). However, in 2015 13 percent of the employees experienced monthly burnout complaints, while in 2017 this increased to 16 percent of the employed population (CBS & TNO, 2018). This increase is a problematic trend since burnouts can have hazardous physical, psychological and occupational consequences, including absenteeism (Salvagioni et al, 2017). Research showed that the costs of absenteeism due to burnout-related complaints in the Netherlands were equal to 3.1 billion euro in 2019 (TNO, 2020). Furthermore, the costs for burnout-related absenteeism in 2015, 2016, and 2017 were respectively 2 billion, 2.5 billion, and 2.8 billion euros (TNO, 2019). As the costs of burnout-related absenteeism and the percentage of employees experiencing burnout complaints showed a consistent increase (CBS & TNO, 2018; TNO, 2019), burnout is becoming a growing concern for employees and employers.

This concern was further amplified by the outbreak of the coronavirus. Although the data is scarce, research in the early stages of the pandemic showed a decrease in the mental health of the general public compared to before the outbreak (Vindegaard & Benros, 2020). One year after the start of the pandemic, over 16.000 people lost their lives due to the coronavirus, and over 1.16 million people were infected by the virus, in the Netherlands alone (RIVM, 2021). To prevent more infections and deaths, strict national corona regulations were in place in the Netherlands since the 15th of March 2020, closing schools, universities, and majorly impacting the lives of many. Moreover, the pandemic forced employees with non-essential jobs to work from home. Research stated that when the office is at home, employees tend to work longer, during the evenings and at weekends (Broughton, 2007). The tendency to work more, has negative effects on an employees' health, as "employees who feel "on" all the time are at a higher risk of burnout when working from home than if they were going to the office as usual" (Giurge & Bohns, 2020). Furthermore, the Job Demands-Resources (JD-R) model showed that job demands are primarily related to the exhaustion dimension of burnout, and job resources are primarily related to disengagement (Demerouti et al., 2001). Job resources are physical, psychological, social, and organizational aspects of work that can be used to accomplish work goals, reduce job demands, and stimulate growth (Demerouti et al., 2001). Forced working from home may alter or limit the job resources (Oakman et al., 2020), making it harder to cope with the job demands and thereby increasing exhaustion and disengagement. Besides, research stated that working from home reduces the boundaries between the work and non-work domain (Broughton, 2007). Additionally, reduced boundaries were together with time-based conflicts and behavior-based conflicts the key factors for Work-Home Interference (Allen et al., 2012). People who are forced to work from home due to the corona regulations are more likely to experiences higher levels of Work-Home Interference due to the psychological involvement with the family and work at the same time, role conflicts, and role ambiguity (Frone, 2003). Even before the global pandemic, burnouts could be considered a widespread disease (Korczak, 2012), but the pandemic altered the working environment and placed additional pressure on the home environment. This can lead to an increase in Work-Home Interference and burnout complaints.

2. Scientific introduction

2.1 Burnout

Burnout is defined as "a prolonged response to chronic emotional and interpersonal stressors on the job" (Maslach & Leiter, 2016), which gradually develops over time (Maslach & Leiter, 2016). Research proposed six critical areas of the working environment that contribute a central role in burnout development (Maslach et al., 2001). These six areas were workload, control, reward, community, fairness, and values (Maslach et al., 2001). A chronic mismatch between an employee and one or more of these six areas can develop burnout (Maslach et al., 2001). The frequency in which the burnout complaints are experienced can indicate the level of burnout (Kalimo et al., 2003). Burnout is indicated as mild when the complaints are experienced monthly (Kalimo et al., 2003). Individuals with mild burnout are still able to work despite their mild form of unwell-being and may experience headaches, problems concentrating, and job dissatisfaction (Schaufeli et al., 2001). Burnout is categorized as severe when the complaints are experienced on a weekly or daily basis (Kalimo et al., 2003). Individuals who are on an extended sick leave due to their burnout complaints have clinical burnout, which is the most severe case of burnout (Sonnenschein, 2007). Clinical burned-out individuals suffer continuously from severe energy erosion throughout the day (Sonnenschein, 2007). A meta-analysis showed that burnouts can have physical, psychological, and occupational consequences (Salvagioni et al, 2017). A great variety of possible negative physical consequences can arise from burnout, including prolonged fatigue, headaches, respiratory problems, cardiovascular diseases, and even death before the age of 45 (Salvagioni et al, 2017). The psychological consequences include insomnia, depressive symptoms, and mental health problems (Salvagioni et al, 2017). The occupational consequences can be job dissatisfaction, job performance, absenteeism, presenteeism, and turnover intentions (Salvagioni et al, 2017). There is ample evidence for the negative consequences that burnouts have, and these consequences of burnouts vary greatly depending on the level of burnout.

Burnout assessment

Over the years, the concept of burnout was refined several times. First, burnout was only investigated in the field of human services professions and it was claimed that the psychological syndrome was characterized by exhaustion, depersonalization, and reduced professional efficacy (Maslach et al., 1986). The tool that was designed to assess the three components of burnout was named MBI (Maslach et al., 1986). However, it was stated that burnout can arise among employees in all other professions (Demerouti et al, 2001). Therefore, the terminology of the three components of burnout was slightly revised, such that it is more applicable to other professions, as it assessed exhaustion, cynicism, and reduced professional efficacy (Maslach et al., 2001). Exhaustion is the stress dimension of burnout and it is defined as "feelings of being overextended and depleted of one's emotional and physical resources" (Maslach et al., 2001). Cynicism is defined as "a negative, callous, or excessively detached response to various aspects of the job" (Maslach et al., 2001) and reduced professional efficacy refers to "feelings of incompetence and a lack of achievement and productivity at work" (Maslach et al., 2001). Over the years, the knowledge of burnout improved majorly, and the MBI became a well-known and established tool in assessing one's burnout.

Although the MBI is a well-known and widely used tool to assess burnout, several researchers expressed criticism on the MBI. One shortcoming of the MBI is that all items in each subscale are framed in the same direction, either all questions are phrased positively or negatively (Demerouti & Bakker, 2008). Besides the phrasing of the questions, the core dimensions of burnout, measured by the MBI, were questioned. A meta-analysis showed that reduced professional efficacy developed for the majority independent from the two other core dimensions (Lee & Ashforth, 1996). Researchers claimed that reduced professional efficacy is a possible consequence of burnout and stated that burnout has two core dimensions, namely exhaustion, and disengagement (Demerouti et al., 2001). To overcome the above-mentioned criticism, an alternative measure for burnout was constructed and validated, namely the Oldenburg Burnout Inventory (OLBI). This instrument

contains positively and negatively framed items and measures exhaustion and disengagement (Demerouti & Bakker, 2008). In the OLBI, exhaustion is defined as “a consequence of intensive physical, affective, and cognitive strain, for example as a long-term consequence of prolonged exposure to certain demands” (Demerouti et al., 2001). Disengagement can be seen as the act of distancing oneself from one’s work (Demerouti & Bakker, 2008). Research showed that burnout is optimally characterized by a two-factor model with exhaustion and disengagement (Qiao & Schaufeli, 2011). In sum, the OLBI is an alternative tool to measure burnout, which was created to overcome the critical points on the MBI and will be used in this study.

2.2 Work-Home Interference

Research showed that Work-Home Interference (WHI) was positively related to depression and burnout (Allen et al., 2000). WHI is defined as an inter-role conflict in which pressure arising in the work role is incompatible with pressure arising in the home role (Greenhaus & Beutell, 1985). Pressure in the home role refers to demands at home such as household chores, caring tasks, and psychological involvement with the family (Peeters et al., 2005; Frone, 2003). Research stated that WHI occurs in two directions (Greenhaus et al., 2006). The first direction is work interfering with family (WIF), in which work has a negative impact on the home role, or the family role (Greenhaus et al., 2006; Haslam et al., 2015). The second direction is family interfering with work (FIW), in which the home role, or family role, has a negative impact on the work role (Greenhaus et al., 2006; Haslam et al., 2015). Research emphasized the dysfunctional and socially costly effects of WHI on one's work life, job satisfaction, home life, well-being, and health (Allen et al., 2000). WHI is the conflict between two important domains, work and home, that can disable full participation in one or both of the domains, and can have serious and disruptive physical and psychological consequences.

WHI is often referred to as a reaction to stress that eventually leads to exhaustion (Demerouti et al., 2004). This can be explained using the Effort-Recovery model, which stated that unresolved stress from work, day after day, eventually leads to a constant source of tensions (Demerouti et al., 2004). If employees experience WHI, the opportunities to recover from work may be insufficient and can lead to exhaustion over time (Demerouti et al., 2004). A meta-analysis showed a consistent relation between WHI and burnout (Allen et al., 2000). Moreover, a 5-year longitudinal study among doctors showed that WHI is a key predictor for emotional exhaustion (Hertzberg et al., 2015). Furthermore, research confirms these findings by showing in a one-year longitudinal study that WHI predicted emotional exhaustion (Peeters et al., 2004). Whereas other research showed that exhaustion was a predictor of WHI (Bakker & Geurts, 2004). Moreover, a two-wave panel study, with six months between the measurements, showed that strain is a predictor of WIF (Kelloway et al., 1999). Additionally, other research stated that WHI, work pressure, and exhaustion cannot be considered as only a predictor or only an outcome (Demerouti et al., 2004). In a three-wave panel study, with six weeks between each wave, it is shown that WHI, work pressure, and exhaustion are short-term and long-term predictors of each other (Demerouti et al., 2004). Other research found similar results using a two-wave panel study with one year in between the measurements, showing a reciprocal relationship between WHI and emotional exhaustion (Jensen, 2016). In the literature, evidence for both paths between WHI and emotional exhaustion is found. This research investigates the relationship between WHI has on exhaustion.

Key factors of WHI

Research suggested that WHI has three different key factors (Greenhaus & Beutel, 1985). WHI can arise due to time demands that make it physically impossible to be in two places at the same time, it can arise from the fading boundaries between work and home which causes a spillover of strain from one role to the other, and lastly, specific behaviors that are expected at work can be incompatible with behaviors expected at home (Greenhaus & Beutel, 1985). Thus, there are time-based, strain-based, and behavior-based conflicts from which WHI can arise (Allen et al., 2012). Furthermore, energy-based conflict is proposed as a fourth dimension for WHI as it can hamper the performance in the other role (Greenhaus et al., 2006). Demands at work were the key factors for WIF and the consequences were felt in the family domain (Greenhaus et al., 2006). Vice versa, family demands were the key factors for FIW, and the consequences were experienced in the work domain (Greenhaus et al., 2006). These family demands that can cause FIW are the presence of children, time spent on family activities, psychological involvement with the family, and other stressors in the home role, including family-role conflict, family-role ambiguity, and family distress (Frone, 2003; Greenhaus et al., 2006). The main causes for WIF are work demands, work-role conflict, work-role ambiguity, job stress, job dissatisfaction, overtime, inflexible work schedules, and psychological

involvement at the job (Frone, 2003; Greenhaus et al., 2006). Besides these situational factors, personality traits can have a reducing or exacerbating effect on the experienced WHI. Individuals with high levels of conscientiousness, agreeableness, or positive affectivity tend to experience lower levels of WHI, while individuals with high levels of negative affect and neuroticism tend to experience higher levels of WHI (Allen et al., 2012; Wayne et al., 2004). Concluding, WHI can be caused by time-based, strain-based, behavior-based, and energy-based conflicts, can be reduced or amplified by personality traits, and inhibits performances in the other domain.

Consequences of WHI

The key factors of WIF lie in the work domain and the consequences are experienced in the family domain and the opposite holds for FIW (Greenhaus et al., 2006). Research showed that high levels of WHI were related to high levels of psychosomatic health complaints, burnout complaints, and sleep deprivation (Geurts et al., 1999). A meta-analysis showed that higher levels of WIF and FIW were related to higher levels of general stress, turnover intentions, burnouts, work-related stress, family-related stress, health problems, psychological strain, depression, substance abuse, and anxiety (Amstad et al., 2011). Moreover, higher levels of WIF and FIW were related to lower levels of work satisfaction, organizational commitment, work performance, organizational citizenship behavior, marital satisfaction, family satisfaction, and family-related performance and life satisfaction (Amstad et al., 2011). In conclusion, WHI is related to a great variety of detrimental physical and psychological consequences.

Gender differences

As explained above, the key factors for WHI were time-based, strain-based, behavior-based, and energy-based conflicts, and personality characteristics can reduce or exacerbate the experienced WHI. However, there are also gender differences in the experienced WHI. A study, conducted among 737 men and 528 women, showed that WIF was more strongly associated with burnout for women than for men (Peeters et al., 2005). Moreover, home demands, such as household and caring tasks, were more strongly related to burnout for men than for women (Peeters et al., 2005). Additionally, research on gender differences in WHI showed that women experienced significantly higher levels of WIF than men (Cinamon & Rich, 2002). Moreover, women assigned more importance than men to FIW and reported more instances in which they experienced WIF compared to men (Cinamon & Rich, 2002). Both men and women reported lower levels of FIW than WIF (Cinamon & Rich, 2002). No significant differences were found between levels of FIW, the importance assigned to WIF, and the frequency in which FIW was experienced between men and women (Cinamon & Rich, 2002). A more recent study among 602 female managers and 906 male managers showed that women reported higher levels of WIF while men reported higher levels of FIW (Nyberg et al., 2015). It seems that women experience higher levels of WHI, especially WIF, and experienced it more often.

2.3 Momentary burnout and daily WHI

Burnout can be seen as a long-term phenomenon, as it is defined as “a prolonged response to chronic emotional and interpersonal stressors on the job” (Maslach & Leiter, 2016). This definition implies that just one intense, stressful, or exhaustive day, does not result directly in burnout. However, if someone experiences these stressful or exhaustive days repeatedly without proper coping or recovery mechanism, burnout symptoms will likely develop. Most researches focused on situational factors that contribute to burnout development. The studies that did focus on the personal characteristics, focused mainly on the differences between employees and why some are more likely to develop burnout than others (Xanthopoulou, 2014). However, a lot less attention has been paid to the day-to-day changes in burnout symptoms. Research stated that experiences in burnout complaints change continuously as a response to the changing job characteristics and work-related events (Xanthopoulou, 2014). Positive changes in job characteristics and positive work-related events can reduce the experienced burnout complaints, while negative experiences may increase the burnout complaints. A study investigated the differences in burnout complaints between healthy and clinical burnout individuals (Sonnenschein et al., 2007). Although the average exhaustion of the clinical burnout group was significantly higher than for the healthy group, it showed that exhaustion consistently increased during the day in both groups (Sonnenschein et al., 2007). Furthermore, a 10-day diary study showed that 41% of the variance in exhaustion and 45% of the variance in disengagement was explained by between-person differences and the rest of the variance is explained by within-person fluctuations, potentially caused by strong situational influences (Basinska & Gruszczynska, 2020). Other research confirmed these findings, as 65% of the variance in exhaustion and 56% of the variance in cynicism was attributable to within-person variations (Derks & Bakker, 2014). As job characteristics and work-related events change during the day, burnout complaints likely change with it, creating within-person fluctuations.

Similar to burnout, most research on WHI also focused on the general, long-term influence and little attention was paid to the day-to-day changes and experiences in WHI (Van Hoof et al., 2006). Most of the time, WHI is measured at a completely different time than from which WHI is experienced and the participants have to use their memory to recall certain situations and estimate the levels of interference (Van Hoof et al., 2006). Therefore, a diary study allows for more accurate measurements of an individual's psychological state and experiences, and within-person variations (Bolger et al., 2003). Although the number of studies is scarce, some studies did aim at capturing the experiences of daily WHI. A nine-day daily diary study among 120 academic staff members showed that higher levels of daily fatigue were related to higher levels of daily WHI (Van Hoof et al., 2006). Moreover, it showed that WHI was generally lower on Fridays compared to Mondays, however, the relationship between daily fatigue and daily WHI was invariant across days of the week (Van Hoof et al., 2006). Furthermore, one study investigated the relationship between burnout and WHI on a daily level and it showed that higher levels of daily WHI were related to higher levels of daily exhaustion and cynicism (Derks & Bakker, 2014). Other research focused on the relationship of WHI on burnout of the following day and showed that higher levels of WHI were related to higher levels of burnout on a consequent day (Haar et al., 2018). Furthermore, a five-day diary study among healthcare workers showed that higher levels of daily WHI and burnout were related to higher levels of daily turnover intentions (Blanco-Donoso et al., 2021). As there are within-person variations in WHI, burnout, and other psychological experiences, fluctuations in the experienced workload can also occur. Research showed that more daily experienced workload was related to more daily WIF (Ilies et al., 2007). Diary studies are ideal to capture the experiences in WHI at a time that is not far detached from the actual occurrence of WHI. Thus, a more realistic representation of WHI can be uncovered, which can be used to investigate the relationship with burnout complaints during the day.

2.4 Work from home

The coronavirus caused a global pandemic, with more than 120.000.000 registered cases and over 2.600.000 deaths worldwide after one year (RIVM, 2021). One of the regulations is to force employees with non-essential jobs to work from home. For some, it may be convenient to work from home as there are fewer distractions and commuting is eliminated. While others struggle to work from home due to their preferences, personality, or occupational characteristics that make it tougher to work from home effectively (Kramer & Kramer, 2020). Low-wage and low-skill employees are limited in their ability to work from home while employees who are better paid, have greater occupational skills, and rely more on technology are more likely to work from home effectively (Kramer & Kramer, 2020). As the work and home environment drastically changed and entangled, forced working from home likely has an impact on burnout complaints and WHI.

Increase in burnout as a result of working from home

Even before the pandemic, research stated that working from home reduces the boundaries between the work and non-work domain (Broughton, 2007). The working environment of today and nowadays technology enables employees, in non-physical jobs, to work from anywhere at any time (Davis, 2002). This creates the expectation to always respond to work-related requests, even during non-working hours (Davis, 2002). Research showed that emotional and physical detachment from work positively affected employees' health and performance (de Jonge et al., 2012). Moreover, off-job recovery is vital for employees, as it allows them to perform better in their job and protect their health (de Jonge et al., 2012). "Recovery can be regarded as a process opposite to the straining process during which the detrimental effects of stressful situations are at least alleviated or even eliminated" (de Jonge et al., 2012). When employees are forced to work from home, physical detachment is hardly possible (Oakman et al., 2020). Furthermore, emotional detachment can be made difficult as people tend to work longer, during the evening and weekends when they are working from home (Broughton, 2007). Reduced boundaries and a lack of detachment can hamper the recovery process and increase burnout complaints.

Another negative aspect of working from home is the limited job resources. Research showed that job resources buffered the impact of job demands on burnout (Bakker et al., 2005). The research from Bakker et al. (2005) investigated the buffering effect of four different job resources, namely autonomy, social support, the quality of the relationship with the supervisor, and feedback. Research showed that when working from home, the job resources that were limited mostly are social support and feedback (Oakman et al., 2020). Social support can help to obtain goals and get the work done in time and consequently reducing the impact of work overload on exhaustion (Bakker et al., 2005). When the job characteristics and workload do not change, a reduction in job resources can increase burnout.

Although social support may be limited when working from home, autonomy may increase and thus resulting in a reduction in burnout. Moreover, a nine-month study conducted among self-selected employees in a call center reported an increase in productivity, a reduction in absenteeism, and costs savings for employees that worked from home (Bloom et al., 2015). It was claimed that the increase in productivity was caused by a quieter and more convenient working environment (Bloom et al., 2015). Moreover, the productivity also increased because the employees just simply worked more hours, as they took shorter breaks, started earlier, and worked longer (Bloom et al., 2015). However, in a review of the study, it was acknowledged that not everybody can work effectively from home since they simply don't want to or are not disciplined enough (Bloom, 2014). Only those who are highly self-motivated can work from home effectively (Bloom, 2014). For employees in a call center, it is uncomplicated to work from home and the level of discipline and motivation mainly determines productivity. However, in other professions, the employees' individuals characteristics are subordinate to the job characteristics in dictating productivity when working from home. (Kramer & Kramer, 2020). The obligatory nature of working from home due to the corona regulations is problematic, as those who are unmotivated, undisciplined, or unwilling to work from

home, are forced to do so. Besides that, when the workload remains the same, burnout complaints are likely to develop for those who experience a decrease in job resources and for those with job characteristics that disables them to obtain the same productivity.

Increase in Work-Home Interference due to working from home

Before the global corona pandemic, WHI was mainly investigated with an underlying assumption that "work" and "home" were two separate places and WIF occurred at home after work and FIW happened during the day at work. When working from home, FIW and WIF can occur simultaneously during the day. Resulting in an environment that requires psychological involvement with the family and work at the same time and continuously causes role conflicts (Frone, 2003). Moreover, research showed that working from home is associated with increased levels of role ambiguity (Oakman et al., 2020). Since the schools and universities were closed too due to the national regulations, students and children are also at home, further increasing WHI. Research showed that parents who live with children under the age of 18 experience higher levels of WHI than parents who do not live with younger children (Nomaguchi, 2009). Moreover, a study among working women showed that work-family conflicts had a stronger positive relation to anxiety, depression, and irritation for women with children, compared to women without children (Beatty, 1996). Due to the regulations, additional pressure was placed on the home environment, in which many key factors for WHI lie and potentially show up simultaneously.

As the absence or reduction in job resources has an impact on burnout, it also affects WHI and its relation with exhaustion. Feedback can act as a buffer for the positive relationship between WHI and exhaustion, by reducing the tendency to worry and improving communication and performance (Bakker et al., 2005). Research showed that those who work at home experience lower levels of feedback (Oakman et al., 2020), which reduces the buffering effect and increases WHI and exhaustion. While working from home, women are more likely to experience higher levels of WHI and are more negatively affected by it (Song & Gao, 2020).

Concluding, research showed that more daily WHI was related to more daily burnout (Derks & Bakker, 2014). Additionally, the corona pandemic placed more pressure on the home environment as people are forced to stay inside. Therefore, I expect that daily levels of WHI are stronger related to daily burnout complaints for those who are forced to work from home than for those who are not forced to work from home. Moreover, I expect that the relation between daily WHI and daily burnout is stronger for women than for men. This study measured the burnout complaints on a momentary level, which enabled analyzing the changes in burnout complaints during the day. I expect that people with higher levels of WHI show a stronger increase in momentary burnout during the day than those with lower levels of WHI. Moreover, research showed that women experience higher levels of emotional exhaustion compared to men, while men experience higher levels of depersonalization (Purvanova & Muros, 2010). Since women experience higher levels of WHI, especially while working from home (Cinamon & Rich, 2002; Song & Gao, 2020), I expect that women show a stronger increase in momentary burnout during the day than men.

2.5 Hypotheses

To examine the effect of Work-Home Interference on momentary and daily burnout complaints, a one-day self-reported diary study was conducted among employees from various jobs. Participants were asked to fill in a questionnaire to measure their momentary burnout complaints 7 times during the working day, between 9:00 and 17:00 using a sampling protocol with random time intervals. At the end of the workday, at 21:00, the participants were asked to fill in another questionnaire regarding the experienced burnout complaints and Work-Home Interference during that workday. I formulated the following hypotheses:

1. More daily FIW and WIF are related to more daily exhaustion and disengagement for employees.
2. Daily FIW and WIF are stronger related to daily exhaustion and disengagement for employed women than for employed men.
3. Daily FIW and WIF are stronger related to daily exhaustion and disengagement for employees who are forced to work from home than for employees who are not forced to work from home.
4. Employed women report a stronger increase in momentary exhaustion and disengagement during the day than employed men.
5. Employees with higher levels of FIW and WIF report a stronger increase in momentary exhaustion and disengagement during the day than employees with low levels of FIW and WIF.

3. Methods

3.1 Participants and procedure

The participants were recruited via convenience sampling and participated in the study voluntarily. There were three preconditions the participants had to fulfill, namely, the participants had to be at least 18 years old, work at least 20 hours a week, and had to work during the day of the study. The data collection trajectory lasted two weeks, from the 17th of March 2021 till the 31st of March 2021, excluding the weekend days. The participants were asked to choose one day, within this period, in which they wanted to participate in the study. The participants used the app MetricWire on their phones, to fill in the questionnaires. The participants filled in three different types of questionnaires. The first questionnaire contained the intake questions, which had to be filled in the day before the study. The second questionnaire contained questions regarding burnout on a momentary level, which had to be filled in seven times that day on randomly generated moments between 09.00 and 17.00. The participants received a notification on their phone if they had to fill in a questionnaire, which had to be filled in within 30 minutes. If the time limit was exceeded, the questionnaire was discarded. The last questionnaire contained questions regarding burnout and WHI on a daily level, which had to be filled in once between 21.00 and 23.59. Moreover, the participants were asked whether or not they worked from home due to the corona regulations. The study was conducted in the Netherlands and Guatemala. For both countries, the language of the questionnaire was changed to the respective native language.

In total, 105 employees participated in the study. Nine participants were removed from the data set, due to not meeting the requirement of working at least 20 hours per week. The final sample size contained 96 participants, of which 50 (52.08%) were men and 46 (47.92%) were women. Their mean age was 33.46 years (SD = 12.38, range 18 to 64), 84 (87.5%) of them were highly educated (HBO or higher), 59 (61.46%) participants worked from home on the day of the study and 37 (38.54%) did not work from home. The job sector business service was represented mostly with 18 (18.75%) participants, followed by industry with 12 (12.50%) participants and healthcare/well-being and finance with both 11 (11.46%) participants. Moreover, 60 (62.50%) participants were from the Netherlands and 36 (37.50%) were from Guatemala. A total of 491 momentary measurements were gathered.

3.2 Questionnaires

Momentary burnout was measured seven times during the day, with an adapted version of the OLBI, assessing the two constructs disengagement and exhaustion (Demerouti & Bakker, 2008). To capture the experiences of burnout at the time of the measurement, the items in the questionnaire were adjusted for momentary measurement by adding “Right now,…” to each item. Two examples of momentary disengagement items were “Right now, I am disconnected from my work” and “Right now, I feel engaged in my work”. Two examples of momentary exhaustion were “Right now, I feel emotionally drained” and “Right now, I feel energized”. Both momentary disengagement and emotional exhaustion were measured by eight items using a seven-point scale ranging from 1 (“Completely disagree”) to 7 (“Completely agree”). For both constructs, the final score for each momentary measurement was calculated by taking the average score of all items of that construct. The Cronbach’s alpha was .81 for momentary disengagement and .91 for momentary exhaustion, indicating good and excellent reliability respectively.

Daily burnout was assessed with one measurement, by asking the participants in the evening questionnaire, to what extent they experienced burnout complaints during that day. Therefore, the OLBI questionnaire, which assessed the two constructs disengagement and exhaustion (Demerouti & Bakker, 2008), was adjusted for daily measurement. Therefore, all items were changed to paste tense, and either “Today,…” was added to the item or the item was changed such that it captured the experiences of today. Two examples of daily disengagement items were “Today, I was disconnected from my work” and “Today, I felt sickened by my work tasks”. Two examples of daily

exhaustion were “Today, I found my work to be a positive challenge” and “When I worked today, I usually felt energized”. Both daily disengagement and emotional exhaustion were measured by eight items using a seven-point scale ranging from 1 (“Completely disagree”) to 7 (“Completely agree”). The final scores for daily disengagement and emotional exhaustion were calculated by taking the average score of all items of that construct. The Cronbach’s alpha was .82 for daily disengagement and .86 for daily exhaustion, indicating good reliability.

Daily WHI was assessed with one measurement, using the shortened version of the SWING. The items in the SWING were adjusted for daily measurement by adding “Today,…” to each item. Daily WHI can be measured using a diary questionnaire of the SWING, using 8 items instead of 22 (Van Hoof et al., 2006). Research showed that SWING is a valid instrument to measure the WHI among a wide variety of workers. SWING measured four empirically distinct types of WHI, namely negative WIF, negative FIW, positive WIF, and positive FIW. Since high levels of commitment were required from the participants, it was decided not to overburden them and focus on the negative experiences of WHI. Therefore, the shortened SWING contained six items using a four-point scale ranging from 0 (“Never”) to 3 (“Always”), measuring two distinct constructs, negative WIF, and negative FIW. The items of negative WIF were “Today, how often did it happen that you were irritable at home because your work was demanding?”, “Today, how often did it happen that you found it difficult to fulfill your domestic obligations because you were constantly thinking about your work?”, and “Today, how often did it happen that you did not have the energy to engage in leisure activities with your spouse/family/friends because of your job?”. The items of negative FIW were “Today, how often did it happen that the situation at home made you so irritable that you take your frustrations out on your colleagues?”, “Today, how often did it happen that you had difficulty concentrating on your work because you were preoccupied with domestic matters?”, and “Today, how often did it happen that you did not feel like working because of problems with your spouse/family/friends?”. The final scores for daily WIF and FIW were calculated by taking the average score of all items of that construct. The Cronbach’s alpha was .69 for daily WIF and .52 for daily FIW, indicating questionable and poor reliability respectively.

The intake questionnaire contained questions regarding age, gender, education, hours worked per week, and work sector.

3.3 Statistical analyses

The collected data was analyzed using RStudio. Prior to the single-level model testing, the means and standard deviations of the variables that were measured at the end of the day were computed. After that, the mean scores for daily exhaustion, disengagement, WIF, and FIW were compared from men and women, Dutch and Guatemalan employees, and for those who did and did not work from home, using independent samples t-tests.

To investigate if more daily FIW and WIF were related to more daily exhaustion and disengagement, four different linear regression models were made. In these linear regression models, daily exhaustion and disengagement were the dependent variables and daily FIW and WIF were the explanatory variables. To investigate if gender and working from home moderated the relationship between daily FIW/WIF and daily exhaustion and disengagement, moderator regression analyses were performed. For both hypotheses, four different moderator regressions models were constructed, with daily exhaustion and disengagement being the dependent variables and daily FIW and WIF being the explanatory variables. Additionally, linearity, normally distributed residuals, and homoscedasticity were checked and all assumptions were met.

The collected data can be seen as multi-level data, with the repeated measurements at the lowest level, nested within the participants. Personal characteristics and the measurements at the daily level formed the second level. Momentary exhaustion and disengagement were the variables at the lowest level that were predicted in the two-level models. Consequently, the normality of the variables measured at the lowest level was checked and this assumption was met.

Hypotheses 4 and 5 stated that women and individuals with high levels of daily WIF and FIW experienced a stronger increase in momentary burnout throughout the day. To test these hypotheses, the moderating effect of gender, daily WIF, and daily FIW on the relationship between time and momentary exhaustion and disengagement was investigated. Therefore, multi-level moderation analyses were performed with the participant ID as random intercept. First of all, time is treated as a continuous variable, starting at midnight. Next, time and the moderator (e.g. gender) were added to the model as predictors of momentary exhaustion and disengagement. Consequently, to test for a moderating effect, the interaction term between time and the moderator was added to the model. The assumptions for linearity and homoscedasticity were checked and met. Moreover, since the study was performed on different days, it was controlled for the day of the week.

4. Results

Preliminary analysis for single-level analysis

The results showed that the participants reported more daily WIF (*M* =.69, *SD* = .57) than daily FIW (*M* =.31, *SD* = .39), and experienced more daily disengagement (*M* =3.25, *SD* = 1.05) than daily exhaustion (*M* =2.82, *SD* = 1.05). Subsequently, independent samples t-tests were executed and the results showed that women (*M* = 3.16, *SD* = .97) reported higher levels of daily exhaustion than men (*M* = 2.51, *SD* = 1.03, *t*(94) = -3.19, *p* = .002). However, there was no difference in daily disengagement (*t*(94) = -.17, *p* = .865) and in daily FIW (*t*(94) = -1.37, *p* = .175) between men and women. Furthermore, the results showed that women (*M* = .83, *SD* = .64) experienced higher levels of daily WIF compared to men (*M* = .57, *SD* = .47, *t*(94) = -2.31, *p* = .024). No differences were found in the levels of daily exhaustion, disengagement, WIF, and FIW between the employees who worked from home and those who did not work from home (all *p* ≥ .084).

Preliminary analysis for multi-level analysis

Prior to the multi-level model testing, it was investigated what effect time had on momentary burnout and if the effect of time on momentary burnout varied among participants. Additionally, the relationship between daily burnout and momentary burnout was investigated. This analysis was executed for both dimensions of burnout.

Firstly, a random intercept model, the Null model, was created with an intercept for participants. This model showed that 71.66% of the variance was explained by the person-level and 28.34% was explained by the moment-level. Subsequently, Predictor model 1 was created by adding the variable time to the model as a predictor of momentary exhaustion. Predictor model 1 showed a significant improvement over the Null model, (Δ-2x log = 63.88, *df* = 1, *p* < .001). The estimate of time (*B* = .10, *se* =.01, *t* = 8.31, *p* < .001), was in the expected direction, meaning that momentary exhaustion increased during the day. Finally, it was investigated if the effect of time on momentary exhaustion varied across the participants. Therefore, I randomized the slope for time between participants and this showed a significant improvement over Predictor model 1, (Δ-2x log = 61.54, *df* = 1, *p* < .001). This model was used for adding predictors and interaction terms regarding momentary exhaustion. The change over time of momentary exhaustion is visualized in Figure 1. Please see Appendix Table 1 for the results of the preliminary analysis for the multi-level analysis of momentary exhaustion. Additionally, the results showed that higher levels of daily exhaustion were related to higher levels of momentary exhaustion (*B* = .82, *se* =.05, *t* = 17.19, *p* = < .001). However, there was no interaction (*B* = .01, *se* =.02, *t* = .55, *p* = .587).

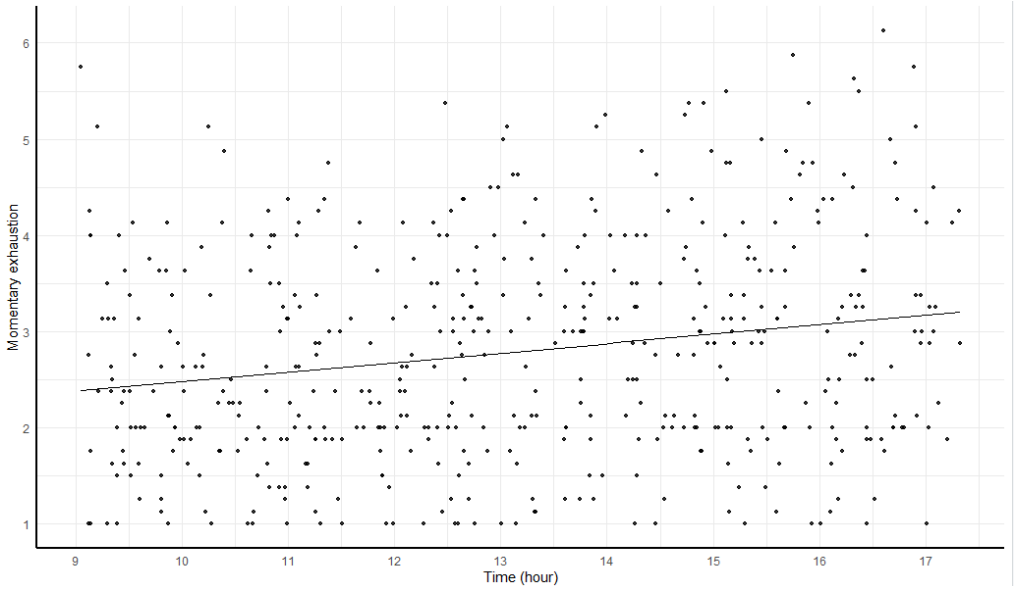

Figure 1. The change in momentary exhaustion during the day

Secondly, the same analysis was conducted for momentary disengagement. Therefore, a Null model was created with momentary disengagement as the dependent variable. The results showed that 67.97% of the variance was explained by the person-level and 32.03% was explained by the moment-level. Consequently, the variable time was added to the model as a predictor of momentary disengagement, creating Predictor model 2. Predictor model 2 showed a significant improvement over the Null model, (Δ-2x log = 22.61, *df* = 1, *p* < .001). The estimate of the coefficient of time (*B*= .06, *se* =.01, *t* = 4.82, *p* < .001) was in the expected direction, meaning that momentary disengagement increased throughout the day. After that, I randomized the slope for time between participants and this showed a significant improvement over Predictor model 2, (Δ-2x log = 36.66, *df* = 1, *p* <.001). This model was used for adding predictors and interaction terms regarding momentary disengagement. The change over time of momentary disengagement is visualized in Figure 2. Please see Appendix Table 2 for the results of the preliminary analysis for the multi-level analysis of momentary disengagement. Additionally, the results showed that higher levels of daily disengagement were related to higher levels of momentary disengagement (*B* = .81, *se* =.04, *t* = 21.45, *p* = < .001). However, there was no interaction (*B* = .03, *se* =.02, *t* = 1.63, *p* = .106).

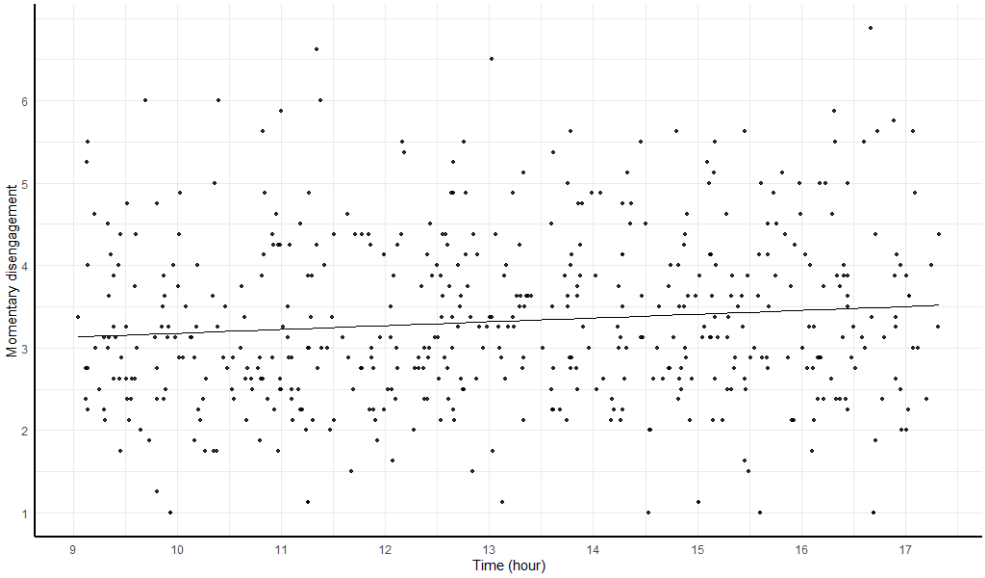

Figure 2. Change in momentary disengagement during the day

Cultural differences

As the study is conducted in two different countries, namely in The Netherlands and in Guatemala, it was investigated if there were differences between the Dutch and the Guatemalan participants. Firstly, the results of the independent samples t-tests showed that Dutch employees (*M* = 3.41, *SD* = 1.05) report marginally significant higher levels of daily disengagement (*t*(94) = -1.96, *p* = .053) compared to Guatemalan employees (*M* = 2.99, *SD* = 1.00). Whereas Guatemalan employees (*M* = .91, *SD* = .62) reported higher levels of daily WIF (*t*(94) = -2.94, *p* = .004) compared to Dutch employees (*M* = .57, *SD* = .50). The results showed that there were no differences in daily FIW and daily exhaustion (both *p* > .128) between the Dutch and the Guatemalan employees. Moreover, country did not moderate the relationships between daily WIF and daily exhaustion, daily WIF and daily disengagement, daily FIW and daily exhaustion, and daily FIW and daily disengagement (all *p* > .390). Lastly, the results of the multi-level analysis showed that Dutch employees experienced higher levels of momentary disengagement (*B* = -.53, *se* = .19, *t* = -2.85, *p* = .005) compared to Guatemalan employees. However, there was no interaction between time and country for disengagement (*B* = .01, *se* = .04, *t* = .39, *p* = .697). The results showed that country was not a predictor of momentary exhaustion (*B* = -.13, *se* = .21, *t* = -.63, *p* = .532) and that there was no interaction between time and country (*B* = .03, *se* = .04, *t* = .70, *p* = .487).

4.1 Hypothesis 1: Relationship between daily WHI and daily burnout

Hypothesis 1 stated that more daily FIW and WIF were related to more daily exhaustion and disengagement for employees. To test this hypothesis, four linear regression models were constructed. In the linear regression models with daily exhaustion as the dependent variable, the results showed that the more participants reported experiencing daily WIF, the more daily exhaustion they reported (B = .51, se = .09, t(94) = 5.68, p < .001). However, the results showed that there was no relationship between daily FIW and daily exhaustion (B = .17, se = .10, t(94) = 1.67, p = .099).

In the linear regression models with daily disengagement as the dependent variable, the results showed that the more participants reported experiencing daily WIF, the more daily disengagement they reported (B = .24, se = .10, t(94) = 2.44, p = .017). Moreover, the results showed that the more daily FIW the participants reported, the more daily disengagement they reported, (B = .27, se = .10, t(94) = 2.70, p = .008). Accordingly, hypothesis 1, which stated that more daily FIW and WIF were related to more daily exhaustion and disengagement for employees, was partly confirmed.

4.2 Hypothesis 2: Moderating effect of gender

Hypothesis 2 stated that daily FIW and WIF are stronger related to daily exhaustion and disengagement for employed women than for employed men. To examine the moderating effect of gender, four different moderation analyses were performed.

The first moderator regression analysis with daily exhaustion as dependent variable showed that the more daily WIF the participants reported, the more daily exhaustion they reported, (B = .56, se = .15, t(92) = 3.79, p < .001) and women report higher levels of daily exhaustion (B = .40, se = .18, t(92) = 2.24, p = .028). However, gender did not moderate the relationship between daily WIF and daily exhaustion (B = -.16, se = .19, t(92) = -.88, p = .381, Δr^2 = 4.50%). The second moderator regression analysis with daily exhaustion as dependent variable showed that the more daily FIW the participants reported, the more daily exhaustion they reported, (B = .44, se = .17, t(92) = 2.55, p = .012) and women report higher levels of daily exhaustion (B = .57, se = .19, t(92) = 2.94, p = .004). Furthermore, gender moderated the relationship between daily FIW and daily exhaustion (B = -.45, se = .21, t(92) = -2.18, p = .032, Δr^2 = 12.8%). The results showed that daily FIW was unrelated to daily exhaustion in women (B = -.02, se = .12, t(92) = -.14, p = .890), however, in men, more daily FIW was related to more daily exhaustion (B = .44, se = .17, t(92) = 2.55, p = .012). Figure 3 shows the moderation analysis of gender on the relationship between daily FIW and daily exhaustion.

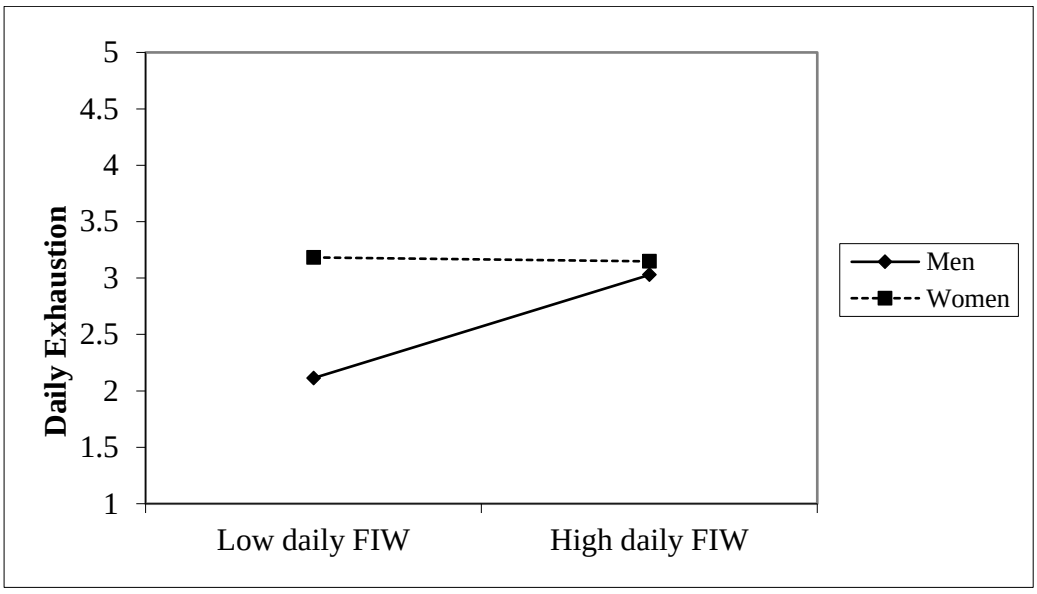

Figure 3. Moderation analysis of gender on the relationship between daily FIW and daily exhaustion

Consequently, the moderating effect of gender on the relationship between daily WHI and daily disengagement was investigated. The first moderator regression analysis with daily disengagement as dependent variable showed that there was no relationship between daily WIF and daily disengagement, (B = .17, se = .17, t(92) = .97, p = .335) and no relationship between gender and daily disengagement (B = -.08, se = .21, t(92) = -.37, p = .715). Furthermore, gender did not moderate the relationship between daily WIF and daily disengagement (B = .14, se = .22, t(92) = .64, p = .525, Δr^2 = .10%). The second moderator regression analysis with daily disengagement as dependent variable showed that there was no relationship between daily FIW and daily disengagement, (B = .29, se = .18, t(92) = 1.61, p = .111) and no relationship between gender and daily disengagement (B = -.04, se = .20, t(92) = -.20, p = .838). Furthermore, gender did not moderate the relationship between daily FIW and daily disengagement (B = -.03, se = .22, t(92) = -.13, p = .901, Δr^2 = .00%).

The results showed that gender only moderated the relationship between daily FIW and daily exhaustion, however, in the opposite direction than expected as in men, more daily FIW was related to more daily exhaustion. Therefore, hypothesis 2, daily FIW and WIF are stronger related to daily exhaustion and disengagement for employed women than for employed men, was rejected.

4.3 Hypothesis 3: Moderating effect of working from home

Hypothesis 3 claimed that daily FIW and WIF were stronger related to daily exhaustion and disengagement for employees who are forced to work from home than for employees who are not forced to work from home. To examine the moderating effect of working from home, four moderation analyses were executed.

Firstly, the moderating effect of working from home on the relationship between daily WHI and daily exhaustion was investigated. The first moderator regression analysis with daily exhaustion as dependent variable showed that the more daily WIF the participants reported, the more daily exhaustion they reported, (B = .40, se = .13, t(92) = 3.07, p = .003). However, the results showed that there was no relationship between working from home and daily exhaustion (B = .042, se = .18, t(92) = .23, p = .819). Moreover, working from home did not moderate the relationship between daily WIF and daily exhaustion (B = .21, se = .18, t(92) = 1.16, p = .248, Δr^2 = 1.10%). The second moderator regression analysis with daily exhaustion as dependent variable showed that there was no relationship between daily FIW and daily exhaustion, (B = .04, se = .22, t(92) = .18, p = .862) and no relationship between working from home and daily exhaustion (B = .13, se = .22, t(92) = .62, p = .538). Furthermore, working from home did not moderate the relationship between daily FIW and daily exhaustion (B = .16, se = .25, t(92) = .62, p = .535, Δr^2 = .40%).

Secondly, the moderating effect of working from home on the relationship between WHI and daily disengagement was investigated. The first moderator regression analysis with daily disengagement as dependent variable showed that there was no relationship between daily WIF and disengagement, (B = .12, se = .15, t(92) = .84, p = .404) and no relationship between working from home and daily disengagement (B = .11, se = .21, t(92) = .52, p = .603). Furthermore, working from home did not moderate the relationship between daily WIF and daily disengagement (B = .23, se = .20, t(92) = 1.11, p = .268, Δr^2= 1.20%). The second moderator regression analysis with daily disengagement as dependent variable showed that there was no relationship between daily FIW and disengagement, (B = .09, se = .22, t(92) = .40, p = .690) and no relationship between working from home and daily disengagement (B = .10, se = .21, t(92) = .50, p = .620). Furthermore, working from home did not moderate the relationship between daily FIW and daily disengagement (B = .23, se = .25, t(92) = .92, p = .360, Δr^2 = .90%).

Accordingly, hypothesis 3, daily FIW and WIF were stronger related to daily exhaustion and disengagement for employees who are forced to work from home than for employees who are not forced to work from home, was rejected.

4.4 Hypothesis 4: Gender differences in the change in momentary burnout

Hypothesis 4 stated that women reported a stronger increase in momentary exhaustion and disengagement compared to men. For both dimensions of burnout, multi-level regression models were made to test this hypothesis. First, the gender differences were investigated on the change in momentary exhaustion and subsequently on the change in momentary disengagement.

4.4.1 Momentary exhaustion

Predictor model 3 was created by adding the variable gender to the model as a predictor of momentary exhaustion. Predictor model 3 showed a significant improvement in model fit (Δ-2x log = 6.58, *df* = 1, *p* = .010) and the results showed that women reported higher levels of momentary exhaustion (*B* = .63, *se* =.19, *t* = 3.33, *p* = .001). Consequently, the interaction term between time and gender was added to the model. This model did not show a significant increase in model fit (Δ-2x log = .04, *df* = 1, *p* = .835). Additionally, the results showed that there was no interaction between time and gender (*B* = .01, *se* =.04, *t* = .21, *p* = .835). The results of the multi-level analyses are shown in Appendix Table 3.

Although there was no interaction between time and gender, a simple slope analysis was conducted for exploratory purposes and visualized in Figure 4. Figure 4 shows the relationship between time and momentary exhaustion, for both men (*B* = .09, *se* = .02, *t* = 3.81, *p* < .001) and women (*B* = .10, *se* =.03, *t* = 3.93, *p* < .001). The results showed that momentary exhaustion increased during the day for both genders and women reported higher levels of momentary exhaustion than men. However, since there was no interaction between time and gender, the positive relationship between time and momentary exhaustion was not stronger for women.

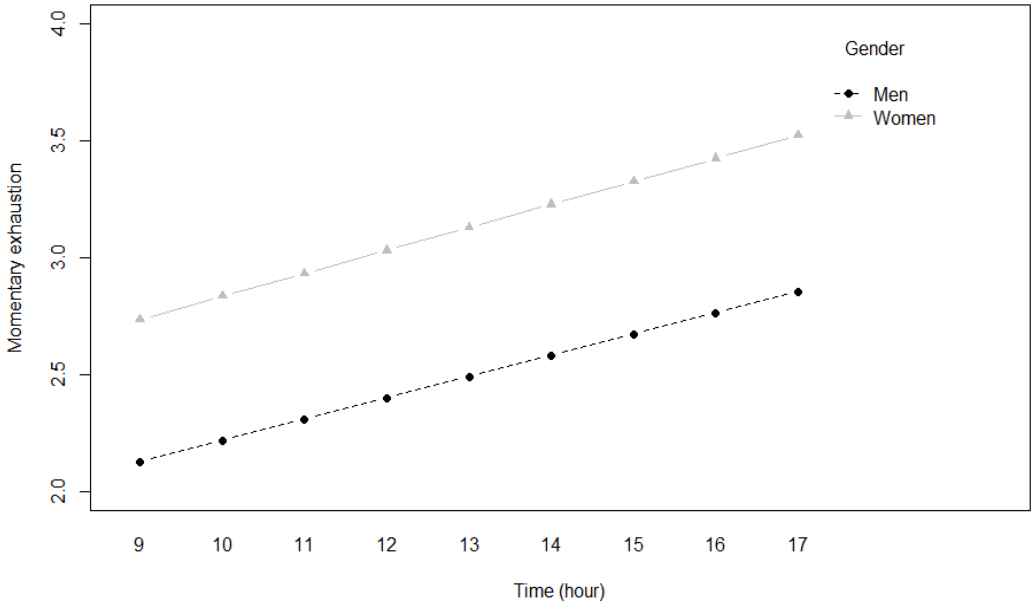

Figure 4. The change in momentary exhaustion for men and women.

4.4.2 Momentary Disengagement

To investigate the differences in momentary disengagement between men and women, Predictor model 4 was created, in which the variable gender was added to the model as a predictor of momentary disengagement. The results showed that there was no relationship between gender and momentary disengagement (*B* = .04, *se*=.19, *t* = .20, *p* = .844) and that there was no significant increase in model fit ,(Δ-2x log = .04, *df* = 1, *p* = .844). Subsequently, the interaction term between time and gender was added to the model. This model did not show a significant increase in model fit ,(Δ-2x log = 1.76, *df* = 1, *p* = .185). Moreover, the results showed that there was no interaction between time and gender (*B* = -.04, *se* =.03, *t* = -1.32, *p* = .191). The results of the multi-level analyses are shown in Appendix Table 4.

Although there was no interaction between time and gender, a simple slope analysis was conducted for exploratory purposes and visualized in Figure 5. Figure 5 shows the relationship between time and momentary disengagement, for both men (B = .08, se =.02, t = 3.36, p = .001), and women (B = .03, se =.02, t = 1.40, p = .166). In contrast to what was expected, Figure 5 shows that the slope for men is somewhat steeper compared to women. However, the results showed that there was no relationship between time and momentary disengagement for women, and no interaction between time and gender. Implying that the positive relationship between time and momentary disengagement was not stronger for men.

Based on the above-shown results, hypothesis 4, employed women reported a stronger increase in momentary exhaustion and disengagement during the day than employed men, was rejected.

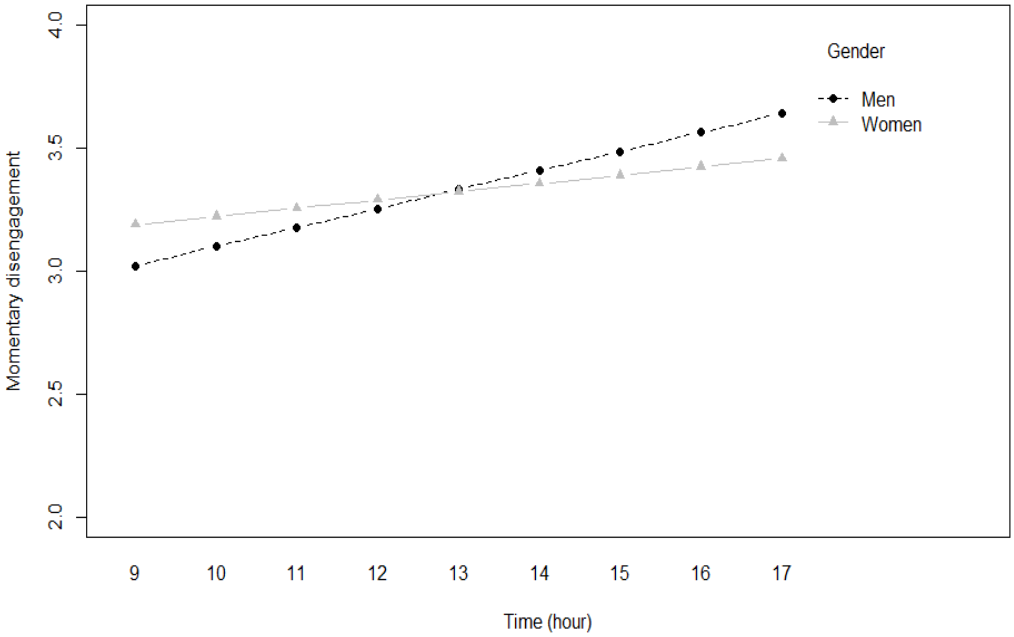

Figure 5. The change in momentary disengagement for men and women.

4.5 Hypothesis 5: Work-Home Interference as a predictor of momentary burnout

Hypothesis 5 stated that individuals with higher levels of daily FIW and WIF reported a stronger increase in momentary exhaustion and disengagement compared to individuals with lower levels of daily FIW and WIF. To test this hypothesis, different multi-level regression models were made. First, the effects of daily WIF and FIW were tested on the change in momentary exhaustion during the day and consequently on the change in momentary disengagement.

4.5.1 Daily WIF on momentary exhaustion

Predictor model 5 was created by adding the variable daily WIF to the model as a predictor of momentary exhaustion. Predictor model 5 showed a significant improvement in model fit (Δ-2x log = 28.70, *df* = 1, *p* = < .001). The results showed that higher levels of daily WIF were related to higher levels of momentary exhaustion (*B* = .89, *se* =.15, *t* = 5.83, *p* = < .001). Consequently, the interaction term between time and daily WIF was added to the model. The results showed a marginally significant improvement in model fit (Δ-2x log = 3.64, *df* = 1, *p* = .056), and a marginally significant interaction term between time and daily WIF (*B* = .06, *se* =.03, *t* = 1.92, *p* =.059). The results of the multi-level analyses are shown in Appendix Table 5.

Consequently, a simple slope analysis was conducted to test the relationship between time and momentary exhaustion for high, mean, and low levels of daily WIF. The results were visualized in Figure 6. Figure 6 shows the change in momentary exhaustion over time for high levels of daily WIF (+1 SD; *B* = .13, *se* =.02, *t* = 5.40, *p* < .001), the mean (*B* = .09, *se* =.02, *t* = 5.57, *p* < .001) and for low levels of daily WIF (-1 SD; *B* = .06, *se* =.02, *t* = 2.56, *p* = .012).

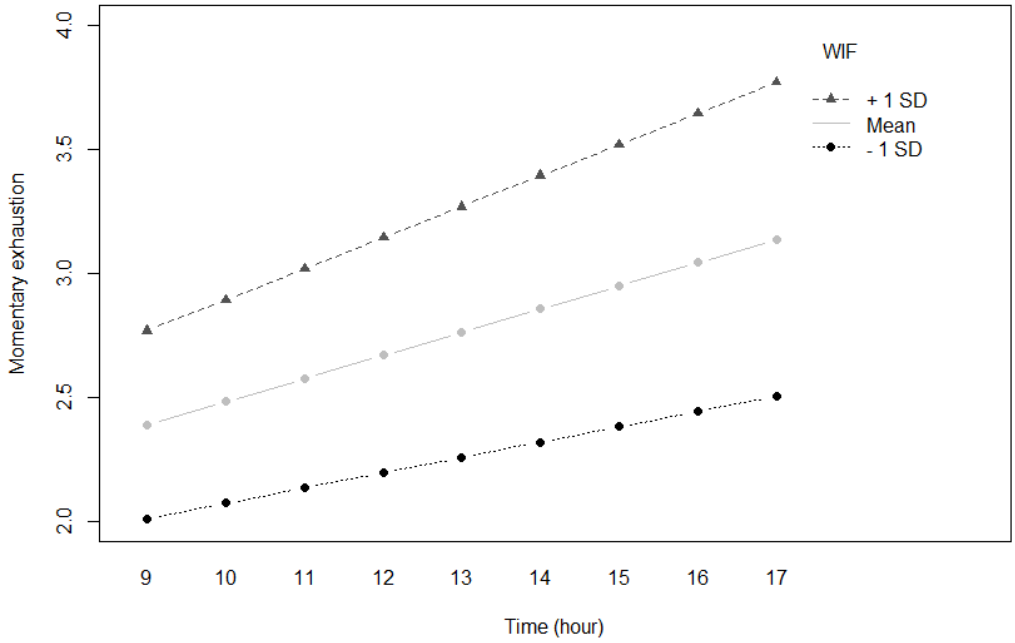

Figure 6. The change in momentary exhaustion for high, mean, and low levels of daily WIF

4.5.2 Daily FIW on momentary exhaustion

Predictor model 6 was created by adding daily FIW to the model as a predictor of momentary exhaustion. The results showed that there was no relation between daily FIW and momentary exhaustion (*B* = .23, *se* =.26, *t* = .89, *p* = .377), and no significant improvement in model fit (Δ-2x log = .80, *df* = 1, *p* = .370). Consequently, the interaction term between time and daily FIW was added to the model. The results showed that there was no interaction (*B* = .002, *se* =.04, *t* = .04, *p* = .967) and no significant increase in model fit, (Δ-2x log = .002, *df* = 1, *p* = .966). The results of the multi-level analyses are shown in Appendix Table 6.

Although there was no interaction between time and daily FIW, a simple slope analysis was conducted for exploratory purposes to test the relationship between time and momentary

exhaustion for high, the mean, and low levels of daily FIW. The results were visualized in Figure 7. Figure 7 shows the relationship between time and momentary exhaustion for high levels of daily FIW (+1 SD; *B* = .096, *se* =.02, *t* = 4.11, *p* < .001), the mean (*B* = .095, *se* =.02, *t* = 5.49, *p* < .001) and low levels of daily FIW (-1 SD; *B* = .094, *se* =.03, *t* = 3.84, *p* < .001).

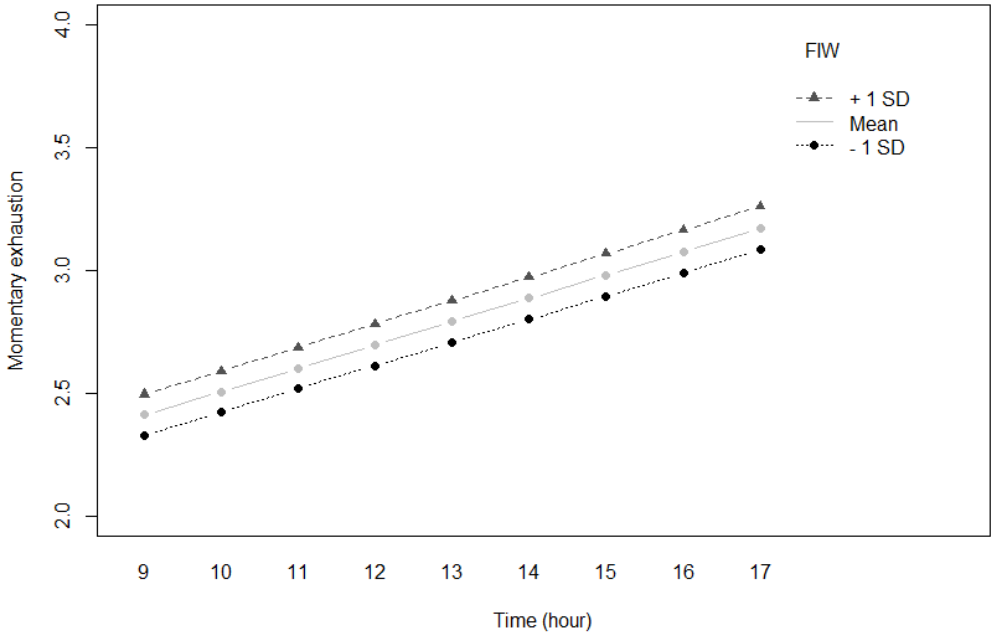

Figure 7. The change in momentary exhaustion for high, mean, and low levels of daily FIW

4.5.3 Daily WIF on momentary disengagement

Daily WIF was added to the model as a predictor of momentary disengagement. This model showed a significant increase in model fit, (Δ-2x log = 7.39, *df* = 1, *p* = .007). Moreover, the results showed that higher levels of daily WIF were related to higher levels of momentary disengagement (*B* = .44, *se* =.16, *t* = 2.75, *p* = .007). Consequently, the interaction term between time and daily WIF was added to the model. The results showed that there was no interaction (*B* = .02, *se* =.03, *t* = .55, *p* =.586) and no increase in model fit, (Δ-2x log = .31, *df* = 1, *p* = .578). The results of the multi-level analyses are shown in Appendix Table 7.

Although there was no interaction between time and daily WIF, a simple slope analysis was conducted for exploratory purposes to test the relationship between time and momentary disengagement for high, the mean, and low levels of daily WIF. Figure 8 shows a visualization of the simple slope analysis, which shows the relation between time and momentary disengagement for high levels of daily WIF (+1 SD; *B* = .07, *se* =.02, *t* = 2.77, *p* = .007), the mean (*B* = .06, *se* =.02, *t* = 3.33, *p* = .001), and low levels of daily WIF (-1 SD; *B* = .05, *se* =.02, *t* = 1.96, *p* = .054).

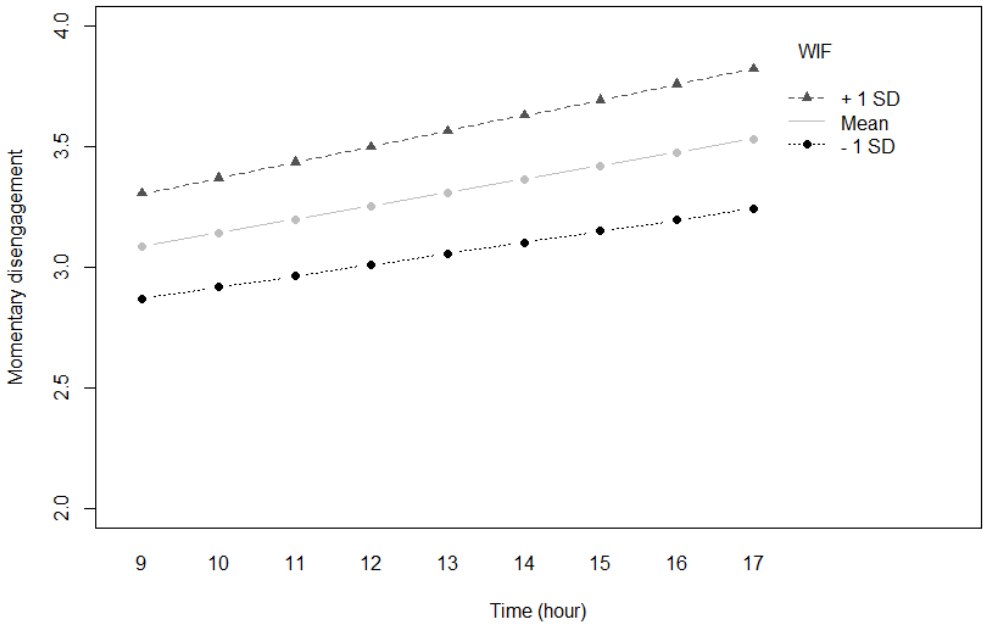

Figure 8. The change in momentary disengagement for high, mean, and low levels of daily WIF

4.5.4 Daily FIW on momentary disengagement

Predictor model 8 was created by adding daily FIW to the model as a predictor of momentary disengagement. The results showed that higher levels of daily FIW were related to higher levels of momentary disengagement (*B* = .59, *se* =.24, *t* = 2.50, *p* = .014). Moreover, Predictor model 8 showed a significant improvement in model fit, (Δ-2x log = 6.14, *df* = 1, *p* = .013). Consequently, the interaction term between time and daily FIW was added to the model. The results showed that there was no interaction (*B* = -.02, *se* =.04, *t* =- .54, *p* = .591), and no significant increase the model fit, (Δ-2x log = .31, *df* = 1, *p* = .580). The results of the multi-level analysis are shown in Appendix Table 8.

Although there was no interaction between time and daily FIW, a simple slope analysis was conducted for exploratory purposes to test the relationship between time and momentary disengagement for high, mean, and low levels of daily FIW. The results are shown in Figure 9, which shows the relation between time and momentary disengagement for high levels of daily FIW (+1 SD; *B* = .05, *se* =.02, *t* = 2.13, *p* = .036), the mean (*B* = .06, *se* =.02, *t* = 3.40, *p* = .001), and low levels of daily FIW (-1 SD; *B* = .07, *se* =.02, *t* = 2.76, *p* = .007).

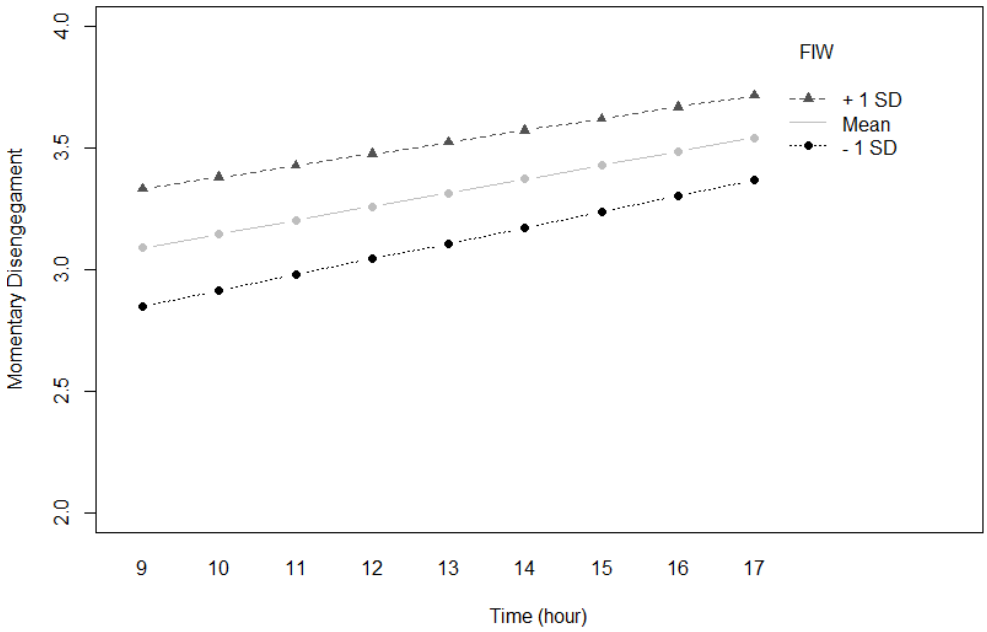

Figure 9. The change in momentary disengagement for high, mean, and low levels of daily FIW

The results showed that higher levels of daily WIF were related to higher levels of momentary exhaustion and that higher levels of daily WIF and FIW were related to higher levels of momentary disengagement. Moreover, the results showed that individuals with relatively high levels of daily WIF experienced a marginally significant (p = 0.056) stronger increase in momentary exhaustion during the day. However, the results showed that the positive relationship between time and momentary exhaustion was not stronger for high levels of daily FIW. Moreover, the results showed that the positive relationship between time and momentary disengagement was not stronger for high levels of daily FIW or daily WIF. Accordingly, hypothesis 5, employees with higher levels of FIW and WIF showed a stronger increase in momentary exhaustion and disengagement during the day than employees with low levels of FIW and WIF, was rejected.

5. Discussion

This study investigated the relationships between daily Work-Home Interference and momentary and daily burnout. In this study, Work-Home Interference and burnout both consisted of two underlying constructs. Therefore, a total of four relationships were investigated, namely, the relationships between Work Interfering with Family and exhaustion, Work Interfering with Family and disengagement, Family Interfering with Work and exhaustion, and Family Interfering with Work and disengagement. Additionally, burnout was measured on two levels, daily and momentary, while Work-Home Interference was only measured on a daily level. The daily measurements reflect what extent the participants experienced burnout complaints and Work-Home Interference during that day, with one measurement in the evening. While the momentary measurements reflect the experiences of burnout complaints at the time of the measurement, at seven randomly generated moments during the workday.

5.1 Main findings

5.1.1 Work-Home Interference and burnout

The results showed that more daily Work Interfering with Family was related to more daily and momentary exhaustion. However, the results showed that there was no relationship between daily Family Interfering with Work and both daily and momentary exhaustion. Moreover, the results did show that more daily Work Interfering with Family and Family Interfering with Work were related to more daily and momentary disengagement. These findings are supported by literature that showed that more daily Work-Home Interference was related to more daily exhaustion and cynicism (Derks & Bakker, 2014), and more daily exhaustion and depersonalization (Blanco-Donoso et al., 2021). Additionally, the results of my study showed that more daily burnout was related to more momentary burnout. Although the studies of Derks & Bakker (2014) and Blanco-Donoso et al. (2021) measured Work-Home Interference and burnout only on a daily level, it seems in line with the reasoning that those who reported higher levels of daily burnout also reported higher levels of momentary burnout.

First of all, a possible explanation for the unsupported relationships between daily Family Interfering with Work and both daily and momentary exhaustion is the length of the study and the sporadic behavior of the critical incidents. Research stated that the experiences of Work-Home Interference are affected by the characteristics of the work and home domain, but also by critical incidents, which spontaneously and unexpectedly occur (Demerouti et al., 2004). Since the study of Derks & Bakker (2014) lasted for five consecutive workdays, whereas my study lasted for one day, it is likely that the participants in the study of Derks & Bakker (2014) experienced more critical incidents and consequently reported higher levels of daily Work-Home Interference. Moreover, the mean daily Work-Home Interference in the study of Derks & Bakker (2014) was equal to 2.31, where all items were rated on a 5-point scale ranging from 1 to 5, measured with the same tool as in my study. Furthermore, 69 participants participated in the study of Derks & Bakker (2014) and a total of 293 daily measurements were obtained. While in my study, a total of 96 daily measurements were gathered. Additionally, in the study of Blanco-Donoso et al. (2021), 56 participants were followed for five consecutive workdays and a total of 280 observations were gathered. The sample in Blanco-Donoso et al. (2021) reported a mean daily Work-Home Interference of 1.01, measured with the same tool and scale as in my study. Whereas the average daily Work-Home Interference in my study was equal to 0.50, measured on a 4-point scale ranging from 0 to 3. Implying that my sample experienced relatively low levels of daily Work-Home Interference. Furthermore, although my sample size is larger than the sample size of Derks & Bakker (2014) and Blanco-Donoso et al. (2021), the number of observations in my study on the daily level is lower, resulting in less statistical power.

Secondly, another reason may reside in the fact that both Derks and Bakker (2014) and Blanco-Donoso et al. (2021) did not make a distinction between Work Interfering with Family and

Family Interfering with Work and computed the score for daily Work-Home Interference by taking the average of all items. Whereas in my study, a distinction between the two variables was made. Additionally, the participants in my study reported more daily Work Interfering with Family than daily Family Interfering with Work. Moreover, other researchers found similar results and showed that people experienced higher levels of Work Interfering with Family than Family Interfering with Work (Wang et al., 2012; Cinamon & Rich, 2002). Hence, Family Interfering with Work may be more affected by the critical incidents than by the characteristics of the work and home domain. Therefore, capturing the experiences of Family Interfering with Work in a one-day diary study may be harder, possibly resulting in less variance. Thus, the results showed no relationship between daily Family Interfering with Work and daily and momentary exhaustion, which is possibly due to the one-day diary study and the relatively low levels of daily Family Interfering with Work that were reported.

5.1.2 The effect of Work-Home Interference on the change in momentary burnout

Based on a review of literature, it was expected that individuals with high levels of daily Work-Home Interference reported a stronger increase in momentary burnout. Therefore, four relationships were investigated, namely the effect of daily Family Interfering with Work on the change in momentary exhaustion and momentary disengagement, and the effect of daily Work Interfering with Family on the change in momentary exhaustion and momentary disengagement. However, only one of the four relationships was supported by the results.

This study contributes to the literature by showing that individuals with high levels of daily Work Interfering with Family reported a stronger increase in momentary exhaustion during the day compared to individuals with low levels of Work Interfering with Family. Although there are, to my knowledge, no studies that examined the relationship between daily Work-Home Interference and burnout complaints on a momentary level, this finding was in line with the expectations. Firstly, research showed that more daily Work-Home Interference was related to more daily exhaustion (Derks & Bakker, 2014; Blanco-Donoso et al., 2021). Secondly, research showed that among both healthy and clinical burnout individuals, exhaustion increased consistently during the day (Sonnenschein, 2007). Thirdly, literature stated that the experiences of burnout complaints continuously change in response to changing job characteristics and work-related events (Xanthopoulou, 2014). Burnout complaints can decrease when positive work-related events occur, whereas negative experiences increase burnout complaints. Therefore, experiences of Work Interfering with Family may account for negative work-related events, causing an increase in momentary exhaustion during the day.

However, the results did not support the other three relationships, as it showed that individuals with high levels of daily Family Interfering with Work did not experience a stronger increase in momentary exhaustion and momentary disengagement. Furthermore, the results showed that individuals with high levels of daily Work Interfering with Family did not experience a stronger increase in momentary disengagement. These findings were not in line with the expectations, because research showed that Family Interfering with Work from one day was positively related to burnout complaints on a subsequent day (Haar et al., 2018). Moreover, research showed that daily Work-Home Interference was positively associated with daily emotional exhaustion and depersonalization (Blanco-Donoso et al., 2021). Additionally, Family Interfering with Work may account for negative work-related events, which may increase burnout complaints (Xanthopoulou, 2014). Therefore, it was expected that the increase in momentary burnout was stronger for high levels of Family Interfering with Work. However, no support was found for these expectations. Besides the low levels of daily Family Interfering with work, possibly due to the one-day sampling that was used, there are two other possible explanations for these findings.

First of all, a possible reason for these findings may reside in the fact that the participants in my study are from various occupations, whereas in the study of Blanco-Donoso et al. (2021), all the participants were healthcare professionals working in public hospitals, in the same area. Although

burnouts and Work-Home Interference can happen universally, it may be possible that more consistent findings are obtained when participants are investigated who are exposed to similar job demands and causes for Work-Home Interference such as inflexible work schedules and psychological or emotional involvement at work.

Secondly, in the study of Haar et al. (2018), the relationship between Work Interfering with Family on one day and burnout on the next day was not investigated. Since research showed that people experience more Work Interfering with Family than Family Interfering with Work (Wang et al., 2012), it was expected that Work Interfering with Family would also impact a subsequent measurement of burnout, causing a stronger increase in momentary burnout. However, the multi-level analysis only supported these expectations for the exhaustion component of burnout and not for the disengagement component. A possible explanation for these findings may be that momentary disengagement is less affected by daily Work Interfering with Family. Additionally, the results showed that the effect size of daily Work Interfering with Family on momentary exhaustion was equal to 0.89, while the effect on momentary disengagement was equal to 0.44. Moreover, in the study of Blanco-Donoso et al. (2021), similar results were found, as daily Work-Home Interference was more strongly associated with daily exhaustion (B = .37, p < .010) than with daily depersonalization (B = .15, p < .050). Indicating that momentary disengagement is less prone to Work Interfering with Family.

5.1.3 Gender differences in momentary and daily burnout

The results showed that women reported higher levels of momentary and daily exhaustion. However, there was no relationship between gender and daily and momentary disengagement. These findings were partly in line with the findings of Purvanova & Muros (2010), who showed in a meta-analysis that women reported more emotional exhaustion compared to men, while men were more depersonalized than women. However, other literature showed mixed results regarding the relationships between burnout and gender. Some research showed that women experience higher levels of emotional exhaustion and lower levels of professional efficacy, however, no gender differences were found regarding depersonalization (Bakker et al., 2002). Other research showed that men report more exhaustion and depersonalization (Van Horn et al., 1997). Although the findings of Bakker et al. (2002) and Purvanova & Muros (2010) were measured on a general level, I found similar results on both the daily and momentary levels.

Furthermore, based on a review of literature, it was hypothesized that women reported a stronger increase in momentary burnout and that the relationship between Work-Home Interference and burnout was stronger for women. Therefore, the single-level analysis investigated gender differences in the relationships between Work Interfering with Family and exhaustion, Work Interfering with Family and disengagement, Family Interfering with Work and exhaustion, and Family Interfering with Work and disengagement, on a daily level. While the multi-level analyses investigated the change in momentary exhaustion and disengagement during the workday for both men and women. However, both the multi-level and single-level analyses showed no support for the hypotheses.

These findings were not in line with Peeters et al. (2005) who showed that the positive relationship between Work Interfering with Family and burnout was stronger for women compared with men. Moreover, it was expected that women reported a stronger increase in momentary burnout as research showed that women experienced higher levels of burnout (Bakker et al., 2002), exhaustion (Purvanova & Muros, 2010), Work Interfering with Family and reported more instances in which they experienced Work Interfering with Family (Cinamon & Rich, 2002). Besides, this study was conducted during the pandemic, which forced people with non-essential jobs to work from home and research stated that women are more negatively affected by working from home (Song & Gao, 2020). However, this study showed no support for these hypotheses.

Firstly, a possible explanation for these findings was the difference in levels at which Work-Home Interference and burnout were measured. Burnout and Work-Home Interference were

measured at a general level in Peeters et al. (2005), while in my study, burnout was measured on a momentary and daily level, and Work-Home Interference was measured on a daily level. Additionally, due to the sporadic behavior of critical incidents (Demerouti et al., 2004), and the one-day sampling used in my study, it could be that these critical incidents did not happen or only happened to a few participants, resulting in relatively low levels of Work-Home Interference and a lack of statistical power. While measuring Work-Home Interference on a general level, it is more likely that more participants were able to recall experiences of these critical incidents and consequently reported more Work-Home Interference. However, diary studies do allow for more accurate measurements of an individual's psychological state and experiences, as the measurements are close to the actual experiences (Bolger et al., 2003). On the other hand, research stated that demands in one domain, that require too much effort, eventually lead to building up a negative load that interferes with the other domain (Peeters et al., 2005). As there is referred to as a process, which implies that it takes time, a one-day diary study may be too short to find support for the hypothesized moderating effects of gender on the relationships between daily Work-Home Interference and daily burnout. Moreover, it may also be too short to capture the differences in the changes of momentary burnout between men and women.

Although it is stated above that the results did not support the hypotheses, the results did show one moderating effect, however, in the opposed direction than expected. The results showed that daily Family Interfering with Work was unrelated to daily exhaustion in women, however, in men, more daily Family Interfering with Work was related to more daily exhaustion. This finding was somewhat in line with Peeters et al. (2005), who showed that home demands were more strongly associated with burnout for men compared with women. However, in Peeters et al. (2005), no support was found for the moderating effect of gender on the relationship between Family Interfering with Work and burnout. Additionally, in Peeters et al. (2005), Family Interfering with Work and burnout were measured on a general level. While in my study, these variables were measured on a daily level. As stated before, when measuring on a general level, participants are more likely to report higher levels of Family Interfering with Work, compared to measuring on a daily level. Therefore, this study extends the literature by showing that more daily Family Interfering with Work was related to more daily exhaustion for men. This finding is in line with gender-role theory, as the literature suggested that home and job demands are experienced differently by men and women (Peeters et al., 2005). In gender-role theory, it is claimed that men think they should deal better with job demands than with home demands, whereas the opposite holds for women (Peeters et al., 2005). Therefore, as women may be able to cope better with high home demands, for men, high home demands may result in experiencing higher levels of Family Interfering with Work and consequently higher levels of exhaustion.

5.1.4 Working from home

The results showed that the relationships between daily Work-Home Interference and daily burnout were not stronger for the employees who worked from home. These findings were not in line with what was expected, as research stated that working from home reduces job resources (Oakman et al., 2020), which consequently increases burnout (Bakker et al., 2005). Moreover, it was expected that working from home increased Work-Home Interference due to role ambiguity and simultaneous involvement with the family and work (Oakman et al., 2020; Frone, 2003). Furthermore, research showed that female employees with children reported less happiness when working from home compared to working in the workplace (Song & Gao, 2020). Additionally, research showed that male employees with children experienced more stress while working from home (Song & Gao, 2020). On the other hand, childless males and females reported no differences in well-being between working from home and working at the workplace (Song & Gao, 2020). These are indicators that the composition of the household affects the experiences of Work-Home Interference and burnout while working from home.

Firstly, a possible explanation for these results is that 87.5% of the participants were highly educated. Research stated that employees who are better paid, have greater occupational skills, and rely more on technology are more likely to work from home effectively compared to low-wage and low-skill employees (Kramer & Kramer, 2020). Thus, it may be possible that the participants in my sample are less negatively affected by working from home.

Secondly, another possible explanation is that people may have adapted to the new working situation. The national regulations were in place since the 15th of March 2020, while my study was conducted one year later, starting on the 17th of March 2021 and ending on the 31st of March. Moreover, the employees may enjoy the increased autonomy of working from home, which has a buffering effect on burnout (Bakker et al., 2005). Furthermore, as the pandemic went on, employers may have increased feedback and support, or they provided other opportunities to their employees to increase their ability to work from home effectively. Besides, employees who have job characteristics that made it difficult to work from home effectively, or those who were unmotivated, undisciplined, or unwilling to work from home, or those who did experience higher levels of Work-Home Interference due to forced working from home may already be returned to the workplace when it was possible, despite the regulations.

5.2 Other findings

The results showed no differences in the levels of daily and momentary exhaustion between the Guatemalan and Dutch employees. However, the Dutch employees reported higher levels of daily and momentary disengagement. These findings were in line with Schaufeli (2017), who stated that emotional exhaustion occurs universally. However, the other components of burnout are more Western concepts due to a more individualistic culture (Schaufeli, 2017), which could explain why the Dutch employees reported higher levels of disengagement. It is stated that the Western culture is more individualistic and the Latin American culture is more collectivistic (Spector et al., 2007)

This study showed that Guatemalan employees reported higher levels of daily Work Interfering with Family compared to Dutch employees. However, no differences were found in the levels of daily Family Interfering with Work. These findings were not in line with Spector et al. (2007), who showed that people in an individualistic culture reported higher levels of Work Interfering with Family.

Furthermore, the results of this study showed that the relationship between Work-Home Interference and burnout was not stronger for Dutch or Guatemalan employees. Additionally, there was no interaction between time and country, implying that the increase in momentary burnout was not stronger for Dutch nor Guatemalan employees. These findings were not in line with Spector et al. (2007), who showed that the relationship between work demands and Work Interfering with Family was stronger for individualistic cultures compared to collectivistic cultures.

5.3 Limitations and future research

Like many other studies, this study did contain limitations that should be taken into consideration when interpreting the results. One limitation is that participants were enabled to choose the day in which they wanted to participate in the study. It was decided to do so since high levels of commitment were required from the participants, who voluntarily participated in the study and had to fill in seven surveys at random times during their workday. Subsequently, participants could have chosen a day in which they had fewer obligatory meetings, a more calm and convenient day, or a day in which their spouse or children were not at home. Consequently, participants could have experienced and reported lower levels of Work-Home Interference and burnout, which did not represent their experiences in their average working day during the pandemic. Future research could perform similar research where all the participants participate on the same day. Consequently, it will be more likely that the experiences of Work-Home Interference and burnout during the average working day are captured, which are likely to be higher than in this study. This will provide better insight into the changes in momentary burnout and the impact of Work-Home Interference.

A second limitation is the relatively low levels of Work-Home Interference that were reported by the participants. Possibly due to the one-day sampling and the underrepresentation of those who do experience high levels of Work-Home Interference. As Work-Home Interference arises from time-based and strain-based conflicts (Allen et al., 2012), employees who already experience a lack of time and higher levels of stress were more likely to decline the offer to participate in this study, as it would take up time that could have been spent on other activities. To obtain higher levels of Work-Home Interference, future research could extend the period in which the participants are followed. Subsequently, it will be more likely that participants experience critical incidents and report higher levels of daily Work-Home Interference. Consequently, it may be possible to find support for the relationship between daily Family Interfering with Work and exhaustion. Moreover, better insights on the moderating effect of gender could be uncovered. Additionally, further research should aim for a more equal distribution of individuals with regards to their experiences of Work-Home Interference. Doing so will provide a more realistic representation of how daily Work-Home Interference impacts daily and momentary burnout and it will provide more generalizable results.

A third limitation of the study was that most of the participants (87.5%) were highly educated. Research stated those who have greater occupational skills, rely more on technology, and are better paid are more likely to work from home effectively (Kramer & Kramer, 2020). The results showed that the relationship between daily Work-Home Interference and burnout was not stronger for employees who worked from home. Moreover, no differences were found in the experiences of daily Work-Home Interference and burnout between the employees who worked from home and those who did not work from home. A possible explanation for these findings is the highly educated sample that is more likely to work from home effectively, in comparison to the lower educated employees. Therefore, it is important that in future studies a better representation of the population will be used, to find more generalizable results. Moreover, doing so may results in higher levels of Work-Home Interference and burnout for those who worked from home. Consequently, it would be possible to investigate what effect working from home has on employees. Moreover, a possible moderating effect of education or a confounding effect of type of work or job sector could be investigated.

Furthermore, another limitation of this study is that it was conducted in two countries, with different cultures, namely the individualist and the collectivistic culture (Spector et al., 2007). Although the results are more generalizable and not culture-specific, this has likely impacted the results, as disengagement is less applicable to people in a collectivistic culture (Spector et al., 2007). Additionally, the study was conducted during extraordinary times, as the coronavirus caused a global pandemic. Furthermore, every country coped with these circumstances differently and the severity of the coronavirus may have peaked at a different moment in time. Further research should use a sample from one country to reduce the impact of cultural differences in the experiences of burnout and Work-Home Interference. Moreover, doing so will also eliminate the differences in national regulations between the different countries during extraordinary times, such as this pandemic. Consequently, better insights into the proposed relationships can be uncovered.

Lastly, a limitation of this study is that it did not serve the purpose for employees who work irregularly. Although the employees were not directly excluded from the study, the measurement started at 9.00 and ended at 17.00. This could potentially mean that the first measurements have less value as these employees are not working, while the measurements stop as these employees are still in the middle of their workday. More importantly, inflexible work schedules are an important factor in Work-Home Interference (Frone, 2003). Furthermore, many healthcare workers have to work irregular shifts and the pandemic has placed additional pressure on the healthcare system. Future research could investigate the changes in momentary burnout complaints, where the participants could determine the start and end times of their workday. Doing so will results in a higher quality of the data, more generalizable results, and more insight into the changes of burnout during the time that is dedicated to working.

5.4 Practical implications

Regardless of the above-mentioned limitations, the findings of this study do have potentially valuable practical implications for employers and employees. First of all, it challenges the statement that burnout is a stable trait for shorter times (Basinska & Gruszczynska, 2020), as this study contributes to the literature by showing that among employees from various occupations, burnout complaints consistently increase during the day. Furthermore, burnout is defined as a phenomenon that gradually develops over time as a prolonged response to chronic emotional and interpersonal stressors on the job (Maslach & Leiter, 2016). Measuring burnout complaints on a momentary level can provide insight into this gradual development.

Moreover, one practical implication of measuring momentary burnout, is that the effect of certain tasks can be indicated. Employers and employees can use this information to their advantage to reduce burnout complaints. Employees can decide when to execute the strenuous tasks accordingly, to their preferences. If employees do not have the autonomy to decide when to execute a certain task, or the workflow simply does not allow that, employers can allocate additional job resources more precisely, to reduce burnout complaints and cope with the high job demands. Since it might not be possible to reduce high job demands, employers may benefit to increase job resources adequately, to protect the health of their employees (de Jonge et al., 2012).

Furthermore, the findings of this study suggest that there are experiences of Work-Home Interference on a daily level and showed that employees with high levels of daily Work-Home Interference reported higher levels of daily and momentary burnout. Additionally, this study showed that employees who experience high levels of Work Interfering with Family reported the strongest increase in momentary exhaustion. Consequently, employers can benefit from employees with low levels of daily Work-Home Interference. One practical implication for employers is providing the employees daily feedback or a daily debriefing. Research showed that feedback on performance has a buffering effect on the positive relationship between Work-Home Interference and exhaustion (Bakker et al., 2005). Moreover, research showed that feedback on performance has a buffering effect on the impact of work overload and exhaustion (Bakker et al., 2005). Organizations do have the possibility to change the workplace and help their employees to manage work and non-work responsibilities, resulting in lower Work-Home Interference (Kelly et al., 2011). Research showed that more control over one's working schedule resulted in less Work-Home Interference (Kelly et al., 2011). For the benefit of both the employee and employer, daily job resources should be increased to reduce daily Work-Home Interference and burnout.

Lastly, the results showed a consistent increase in momentary burnout during the day. Therefore, employees should plan their day accordingly, and perform the most strenuous activities in the morning for optimal performance (Sonnenschein, 2007).

5.5 Broad conclusion

This study contributes to the literature by analyzing the moment-to-moment changes in burnout complaints during the day, allowing for insights into the gradual development of burnout and may aid in untangling this phenomenon. Moreover, this study shows that employees with high levels of Work Interfering with Family report the strongest increase in momentary exhaustion. Furthermore, this study contributes to longitudinal and cross-sectional burnout and Work-Home Interference studies by showing support for these relationships on a momentary and daily level and thereby extending literature. Concluding, this study emphasizes the dysfunctional and hazardous effect of Work-Home Interference.

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Appendix

Table 1. Multi-level results of the preliminary analysis regarding momentary exhaustion

	Momentary exhaustion								
	Null model			Predictor model 1			Randomization model		
	Estimate	t-value	p-value	Estimate	t-value	p-value	Estimate	t-value	p-value
Intercept	2.80	27.34	< .001	1.57	8.68	< .001	1.56	6.74	< .001
Time				.10	8.31	< .001	.10	5.53	< .001
Variance level 2 (Person)	.93 (71.66%)			.93 (74.72%)			3.40 (94.23%)		
Variance level 1 (Moment)	.37 (28.34%)			.31 (25.28%)			.21 (5.77%)		
R^2	.717			.757			.839		
Deviance	1145.8			1082.0			1020.4		
ΔX^2				63.88		< .001	61.54		< .001

Table 2. Multi-level results of the preliminary analysis regarding momentary disengagement

	Momentary disengagement								
	Null model			Predictor model 2			Randomization model		
	Estimate	t-value	p-value	Estimate	t-value	p-value	Estimate	t-value	p-value
Intercept	3.34	35.29	< .001	2.58	14.13	< .001	2.59	11.75	< .001
Time				.06	4.82	< .001	.06	3.39	.001
Variance level 2 (Person)	.78 (67.97%)			.79 (69.48%)			2.59 (90.87%)		
Variance level 1 (Moment)	.37 (32.03%)			.35 (30.52%)			.26 (9.13%)		
R^2	.680			.700			.778		
Deviance	1131.2			1108.6			1072.0		
ΔX^2				22.61		< .001	36.66		< .001

Table 3. Multi-level results of the interaction of time and gender on momentary exhaustion

Momentary exhaustion									
	Randomization model			Predictor model 3			Interaction model		
	Estimate	t-value	p-value	Estimate	t-value	p-value	Estimate	t-value	p-value
Intercept	1.56	6.74	< .001	1.27	5.51	< .001	1.31	4.11	< .001
Time	.10	5.53	< .001	.10	5.50	< .001	.09	3.81	< .001
Gender				.63	3.33	.001	.55	1.18	.243
Time*Gender							.01	.21	.835
Variance level 2 (Person)	3.40 (94.23%)			3.35 (94.14%)			3.39 (94.21%)		
Variance level 1 (Moment)	.21 (5.77%)			.21 (5.86%)			.21 (5.79%)		
R^2	.839			.840			.840		
Deviance	1020.4			1009.7			1009.7		
ΔX^2				10.72		.001	.04		.835

Table 2. Multi-level results of the interaction of time and gender on momentary disengagement

Momentary disengagement									
	Randomization model			Predictor model 4			Interaction model		
	Estimate	t-value	p-value	Estimate	t-value	p-value	Estimate	t-value	p-value
Intercept	2.59	11.75	< .001	2.57	10.85	< .001	2.32	7.65	< .001
Time	.06	3.39	.001	.06	3.39	.001	.08	3.36	.001
Gender				.04	.20	.844	.56	1.27	.206
Time*Gender							-.04	-1.32	.191
Variance level 2 (Person)	2.59 (90.87%)			2.59 (90.87%)			2.59 (90.88%)		
Variance level 1 (Moment)	.26 (9.13%)			.26 (9.13%)			.26 (9.12%)		
R^2	.778			.780			.780		
Deviance	1072.0			1071.9			1070.2		
ΔX^2				.04		.844	1.76		.185

Table 3. Multi-level results of the interaction of time and daily WIF on momentary exhaustion

	Momentary exhaustion								
	Randomization model			Predictor model 5			Interaction model		
	Estimate	t-value	p-value	Estimate	t-value	p-value	Estimate	t-value	p-value
Intercept	1.56	6.74	< .001	.95	3.70	< .001	1.44	4.00	< .001
Time	.10	5.53	< .001	.10	5.52	< .001	.06	2.14	.035
Daily WIF				.89	5.83	< .001	.16	.40	.691
Time*Daily WIF							.06	1.92	.059
Variance level 2 (Person)	3.40 (94.23%)			3.56 (94.47%)			3.33 (94.11%)		
Variance level 1 (Moment)	.21 (5.77%)			.21 (5.53%)			.21 (5.89%)		
R^2	.839			.837			.839		
Deviance	1020.4			991.75			988.11		
ΔX^2				28.70		< .001	3.64		.056

Table 4. Multi-level results of the interaction of time and daily FIW on momentary exhaustion

	Momentary exhaustion								
	Randomization model			Predictor model 6			Interaction model		
	Estimate	t-value	p-value	Estimate	t-value	p-value	Estimate	t-value	p-value
Intercept	1.56	6.74	< .001	1.49	6.11	< .001	1.50	5.09	< .001
Time	.10	5.53	< .001	.10	5.53	< .001	.09	4.32	< .001
Daily FIW				.23	.89	.377	.21	.34	.732
Time*Daily FIW							.002	.04	.967
Variance level 2 (Person)	3.40 (94.23%)			3.40 (94.23%)			3.41 (94.26%)		
Variance level 1 (Moment)	.21 (5.77%)			.21 (5.77%)			.21 (5.74%)		
R^2	.839			.840			.840		
Deviance	1020.4			1019.6			1019.6		
ΔX^2				.80		.370	.002		.966

Table 5. Multi-level results of the interaction of time and daily WIF on momentary disengagement

	Momentary disengagement								
	Randomization model			Predictor model 7			Interaction model		
	Estimate	t-value	p-value	Estimate	t-value	p-value	Estimate	t-value	p-value
Intercept	2.59	11.75	< .001	2.30	9.34	< .001	2.43	7.06	< .001
Time	.06	3.39	.001	.06	3.36	.001	.05	1.73	.087
Daily WIF				.44	2.75	.007	.24	.39	.535
Time*Daily WIF							.02	.55	.586
Variance level 2 (Person)	2.59 (90.87%)			2.61 (90.93%)			2.62 (90.97%)		
Variance level 1 (Moment)	.26 (9.13%)			.26 (9.07%)			.26 (9.03%)		
R^2	.778			.779			.780		
Deviance	1072.0			1064.6			1064.3		
ΔX^2				7.39		.007	.31		.578

Table 6. Multi-level results of the interaction of time and daily FIW on momentary disengagement

	Momentary disengagement								
	Randomization model			Predictor model 8			Interaction model		
	Estimate	t-value	p-value	Estimate	t-value	p-value	Estimate	t-value	p-value
Intercept	2.59	11.75	< .001	2.42	10.56	< .001	2.33	8.47	< .001
Time	.06	3.39	.001	.06	3.38	.001	.06	3.00	.004
Daily FIW				.59	2.50	.014	.86	1.53	.129
Time*Daily FIW							-.02	-.54	.591
Variance level 2 (Person)	2.59 (90.87%)			2.49 (90.52%)			2.49 (90.53%)		
Variance level 1 (Moment)	.26 (9.13%)			.26 (9.48%)			.26 (9.47%)		
R^2	.778			.779			.783		
Deviance	1072.0			1065.8			1065.5		
ΔX^2				6.14		.013	.31		.580