


## RESEARCH ARTICLE

# Need for recovery after emotional labor: Differential effects of daily deep and surface acting

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## Summary

This diary study examines the psychological processes that contribute to daily recovery from emotional labor by combining emotion regulation with work-home resources theories. We hypothesized that overall perceptions of display rules relate positively to daily deep and surface acting. Daily surface acting was expected to relate positively to exhaustion and negatively to flow during work and consequently, to a higher need for recovery at the end of the workday. In contrast, daily deep acting was hypothesized to relate positively to flow and negatively to exhaustion and consequently, to a lower need for recovery at the end of the workday. In turn, need for recovery was expected to associate negatively to vigor at bedtime through reduced relaxation during leisure. Fifty Dutch and Polish employees first filled in a survey, and then a diary for five consecutive workdays, twice per day: at the end of the workday and before sleep. Multilevel path analyses largely supported these hypotheses suggesting that surface acting has unfavorable implications, whereas deep acting has favorable implications for daily well-being at work and recovery after work.

## KEYWORDS

deep acting, exhaustion, (need for) recovery, surface acting, work-related flow

## 1 | INTRODUCTION

The requirement to display organizationally desired emotional expressions and hiding others is a key demand for employees who work with people (Hochschild, 1983). For instance, employees in service jobs are expected to express positive emotions towards their customers in order to deliver high quality services (Grandey, 2003). The psychological process through which employees regulate their emotions to align to organizationally-set display rules in order to fulfill role expectations is called emotional labor (Grandey, Diefendorff, & Rupp, 2013). Emotion regulation (i.e., managing emotional expressions and feelings at work) is central in the emotional labor process (Hülshager & Schewe, 2011) and can be achieved either when employees fake the required emotional expressions (i.e., surface acting), or when they change their inner feelings in order to match the required emotions (i.e., deep acting;

Hochschild, 1983). Despite the abundance of empirical evidence on the outcomes of these two emotion regulation strategies for work-related well-being (for meta-analyses see, Hülshager & Schewe, 2011; Mesmer-Magnus, De Church, & Wax, 2012), their implications for daily employee recovery during off-job time have been largely neglected.

This daily diary study investigates the process of recovering from emotional labor on a daily basis, and the role of emotion regulation strategies and work-related well-being therein. Recovery from work-related demands refers to the process through which employees restore the resources that have been used up during work (Sonnetag & Fritz, 2007). Inability to recover daily is detrimental for employee well-being because of the accumulation of strain, whereas successful recovery facilitates employee flourishing (for a review, see Xanthopoulou, Sanz-Vergel, & Demerouti, 2014). Understanding the process through which emotion workers recover is of relevance because more than half of the working population in Western countries deals with demands related to emotional labor on a daily basis (Hülshager & Schewe, 2011). Linking emotional labor and recovery

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after work has important theoretical implications because it helps to unfold the psychological processes involved. Namely, it allows understanding how different emotion regulation strategies relate to well-being during work and, consequently, to (need for) recovery after work. Also, this empirical endeavor will provide significant insights for practice by indicating which emotion regulation strategies should be promoted or avoided for successful recovery.

In line with emotion regulation theory (Gross, 1998), we expect overall perceptions of display rules to encourage employees using deep and surface acting daily. Drawing on the work-home resources model (Ten Brummelhuis & Bakker, 2012) and in agreement with the emotional labor (Grandey, 2000; Holman, Martínez-Iñigo, & Totterdell, 2008; Morris & Feldman, 1996) and recovery (Geurts & Sonnentag, 2006; Sonnentag & Fritz, 2015; Zijlstra, Cropley, & Rystedt, 2014) literatures, we propose further that daily deep and surface acting have differential relationships with daily energy (i.e., exhaustion; Schaufeli, Leiter, Maslach, & Jackson, 1996) and peak experiences during work (i.e., work-related flow; Bakker, 2008) and consequently, with need for recovery (i.e., the need to take a break from the demands of work; Sonnentag & Zijlstra, 2006) at the end of the workday, and recovery after work. Engaging in surface acting on a daily basis may result in an accumulation of problems that is likely to exhaust employees' resources in the short run and, consequently, hinder the recovery process. In contrast, engaging in deep acting may allow reserving and even gaining resources at work that may facilitate recovery after work.

This diary study contributes to the literature in three ways. First, we investigate the role of emotional labor for the recovery process during off-job hours by focusing on potential underlying psychological mechanisms both during work (i.e., emotion regulation strategies and work-related well-being) and after work is done (i.e., need for recovery, relaxation and vigor at bedtime). Previous attempts to integrate the emotional labor and recovery literatures either focused on recovery activities during work (i.e., breaks; Trougakos, Beal, Green, & Weiss, 2008), or investigated specific recovery activities as moderators of the emotional labor-well-being relationship (Diestel, Rivkin, & Schmidt, 2015). Second, we contribute to the discussion of the differential effects of emotion regulation strategies. The meta-analyses of Hülshager and Schewe (2011) and Mesmer-Magnus et al. (2012) suggest that surface acting (i.e., a discordant emotional state) relates consistently to impaired employee well-being, while deep acting (i.e., a congruent emotional state) has weaker (or null) effects on impaired well-being. The main contribution of this study is that we account for the simultaneous effects of deep and surface acting on both energetic (i.e., exhaustion) and motivational (i.e., flow) indicators of well-being, thus providing an overall framework on the role of emotion regulation for employees. In this way, we respond to the call for more studies on the unique effects of emotion regulation strategies (Holman et al., 2008), and we contribute by disentangling further the meaning of these differential effects for employees.

Finally, by recognizing the dynamic nature of emotion regulation strategies (Judge, Fluegge Woolf, & Hurst, 2009; Sanz-Vergel, Rodríguez-Muñoz, Bakker, & Demerouti, 2012), we highlight potential within-person variations in the differential processes that explain the link between emotional labor and recovery. Thus, we add to the discussion about the different effects that have been confirmed at the between-person level of analysis (Xanthopoulou, Bakker, & Ilies, 2012).

## 2 | OVERALL DISPLAY RULES AND DAILY EMOTION REGULATION STRATEGIES

All theoretical models on emotional labor recognize display rules as the main initiator of the emotional labor process (Grandey, 2000; Hochschild, 1983; Holman et al., 2008; Morris & Feldman, 1996). Display rules refer to the degree to which employees perceive that certain (positive, negative, or neutral) emotional expressions are required by the organization and as such are an inherent part of the job. Display rules concern stable norms for each occupation or job position and do not vary significantly within-persons. For example, service sector employees are generally expected to smile to customers, health-care professionals have to be compassionate towards their patients, and administration employees need to stay calm, when dealing with annoying citizens. Diefendorff, Erickson, Grandey, and Dahling (2011) operationalized display rules both as shared norms and as individual perceptions of organizational norms. However, they found that individual perceptions of display rules are more proximal antecedents of employee well-being (i.e., burnout) than shared norms. Thus, we investigate employees' perceptions of the display rules set by their organization.

The most common strategies that individuals employ in order to adhere to the organizationally-desired display rules are deep acting and surface acting (Grandey, 2000). Deep acting concerns the conscious and active effort to transform one's true emotions in order to match those that are desired by the organization, while surface acting concerns the external regulation of the emotional expression without changing one's inner feelings (Hochschild, 1983). Mesmer-Magnus et al. (2012) meta-analyzed 19 correlations and found that display rules related positively both to deep and surface acting at the inter-individual level of analysis. Drawing on these findings, we expect that this positive relationship holds with daily emotion regulation as well. Specifically, employees who generally need to adhere to emotional display rules are more likely to use deep and surface acting on a daily basis. For example, teachers are generally expected to express positive emotions, when interacting with their students. On days that a teacher is confronted with a hyperactive student, (s)he may remind her/himself that being calm may prevent a negative interaction that may harm the student (i.e., deep acting). On days that the teacher is confronted with a student who is unreasonably anxious about his/her school performance, the teacher may fake positive emotions to calm the student down without activating any cognitive processes to truly feel these emotions (i.e., surface acting). Thus, we hypothesize:

**Hypothesis 1.** *Display rules relate positively to daily deep acting (1a) and daily surface acting (1b).*

## 3 | EMOTION REGULATION, WORK-RELATED WELL-BEING, AND NEED FOR RECOVERY

Meta-analyses (Hülshager & Schewe, 2011; Mesmer-Magnus et al., 2012) showed that deep and surface acting have different effects for employees. With the present diary study, we aim to provide further insights by investigating the proposed differential relationships with need for recovery via both exhaustion and work-related flow, on a

daily basis. We test daily exhaustion (i.e., energy depletion due to one's work-related demands; Schaufeli et al., 1996) because it has been found to be a criterion of relevance for emotional labor (Hülshager & Schewe, 2011). Also, we consider work-related flow (i.e., an optimal work experience that is characterized by intrinsic work motivation, total absorption in the task, and work enjoyment; Bakker, 2008) of significance for this study because flow is a dynamic state that varies substantially within the same employee (Ceja & Navarro, 2012). This means that flow is likely to be dependent on proximal, daily emotion regulation strategies, and have immediate outcomes for employees.

Grandey (2000) adopted Gross' (1998) theory to describe the processes, motives, and intentions involved in deep and surface acting that explain their different outcomes for employee well-being. Gross distinguished between antecedent-focused and response-focused emotion regulation. In antecedent-focused regulation, individuals act before the emotion is generated and modify the way they perceive the situation in order to induce the required emotion. This is done either through cognitive restructuring (i.e., by reappraising the current situation) or attention shifting (i.e., by changing the focus to things that may bring up the required emotion). In contrast, response-focused regulation occurs after the emotion is elicited with the aim to modulate the emotional reactions in order to fit to the situation at hand. This is done through faking, suppressing, or intensifying emotions. Based on this distinction, Grandey argued that deep acting is an antecedent-focused strategy because it concerns the inner transformation of one's emotion in order to match the required expression. In contrast, surface acting is a response-focused strategy because it does not involve the transformation of the inner emotional state and results in an inauthentic expression.

Grandey (2000) agrees with Hochschild (1983) in that both deep and surface acting are effortful and require investing resources. However, Grandey challenges Hochschild's proposition that both strategies are equally detrimental for employee well-being. She argues that when employees use surface acting, they need to monitor their emotional state constantly, and fake emotions that they do not truly feel. This is extremely costly because it requires investing significant amounts of energetic, cognitive, and emotional resources, and as such it results in decrements in employee well-being (Brotheridge & Lee, 2002). Although deep acting also requires investing resources in order to reappraise the situation at hand and change the emotional state, Brotheridge and Grandey (2002) argue that this strategy is more optimal than surface acting because it minimizes the psychological costs that relate to the discrepancy between the felt and the expressed emotion thus, preventing impairments in employee well-being. Put differently, by deep acting, employees preserve resources that otherwise would have been invested to deal with the experienced discrepancy between the felt and expressed emotion (i.e., emotional dissonance).

Hülshager and Schewe (2011) synthesized the mechanisms that explain the differential effects of surface and deep acting. Accordingly, surface acting is detrimental for employees because (a) it is energy depleting, (b) it results in felt and expressed inauthenticity, (c) it triggers negative emotions, and (d) it impedes social interactions. In contrast, and despite the required energy investment, deep acting is not detrimental for employees because (a) it prevents the discrepancy between the felt and expressed emotion; (b) it elicits positive emotions; and (c) it facilitates social interactions. These functions suggest that deep acting

does not only help to preserve resources (i.e., by avoiding the emotional discrepancy), but also contributes to gaining resources. This is because the use of deep acting amplifies favorable responses by the interaction partners (Côté, 2005), resulting in rewarding social encounters that enhance employees' sense of efficacy and personal accomplishment (Brotheridge & Grandey, 2002) because they signal that employees are good in their job (Brotheridge & Lee, 2003). As such, deep acting helps employees to feel good about themselves even when the situation is not ideal. Thus, deep acting is a strategy that may save employees' energy and enhance their flow at work. In contrast, the unfavorable effects of surface acting may be attributed to the fact that hiding one's true emotions, and thus being inauthentic, is likely to enhance negative emotions about one's true self because it indicates lack of control over the emotion management process (Erickson & Ritter, 2001). Therefore, surface acting may exhaust employees and make them lose their concentration on and positive feelings about their work.

Based on this analysis, on days that surface acting is used, employees will invest considerable energy to fake emotional expressions that will add up to the energy required to fulfill their other work tasks. This excessive energy investment is likely to overtax and exhaust employees (Bakker, Demerouti, & Sanz-Vergel, 2014). Also, when using surface acting, employees are busy with monitoring and regulating their emotions. This is likely to prevent them from being fully concentrated on their main task, enjoy the task, and perform it because of an intrinsic motivation to continue working (i.e., be in flow), because the felt discrepancy that relates to faking is likely to distract from the motivating aspects of the task (Jett & George, 2003). Flow is an enjoyable state that is evoked when people are involved in challenging activities, while possessing the necessary skills to meet these challenges (Csikszentmihalyi, 1990). Surface acting signals a lack of skills to manage the required emotion successfully because the mere suppression or hiding of true emotions results in negative consequences for employees (e.g., inauthenticity and negative feelings; Erickson & Ritter, 2001) and worse interpersonal functioning (Gross & John, 2003). As such, surface acting is expected to relate negatively to flow because, when employees use this strategy, they lack the means to meet the emotional challenge.

Although deep acting requires energy investment before the emotional encounter, this strategy prevents a discrepancy between felt and expressed emotions, which has been found to protect against resource drain and to facilitate gaining other types of psychological resources (Martínez-Iñigo, Totterdell, Alcover, & Holman, 2007). We argue that the resource reservation and the resource gaining function of deep acting explain its negative relationship with exhaustion, while its resource gaining function supports its positive relationship with flow. Specifically, deep acting prevents employees from investing many resources (e.g., energy) to deal with the incongruence between the expressed and true emotions (Grandey, 2003) thus, facilitating energy preservation (Brotheridge & Lee, 2002). Also, avoiding emotional dissonance allows gaining additional resources because employees can focus on problem-solving and pursue positive interactions with customers that initiate positive emotions that may build resources in employees (Fredrickson, 2001). Thus, deep acting is expected to relate negatively to daily exhaustion.

In addition, when using deep acting, employees are more likely to be in flow because deep acting may elicit positive interpersonal feedback from the target of the emotional expression (e.g., the client; Côté, 2005), making employees to enjoy work and to be absorbed in the interaction. The positive interpersonal feedback that individuals receive when they use deep acting (Gross & John, 2003) functions as a source of job resources like social support and performance feedback. According to Gross and John, people who actively try to maintain positive, social interactions (i.e., use cognitive reappraisal) are more eager to open up emotionally to others (e.g., express sympathy towards the client). This may spark a positive feedback loop (i.e., a positive reaction from the client) that builds social support. Also, positive interpersonal interactions signal that employees are capable and efficacious at their work (i.e., feedback) that relate positively to flow (Salanova, Bakker, & Llorens, 2006). Empirical evidence suggests that employees, who work in supportive environments that provide high-quality feedback, have the necessary means to fulfill their goals, and thus are more likely to experience flow (Mäkikangas, Bakker, Aunola, & Demerouti, 2010). For instance, when an employee reacts with true understanding to an angry customer, the customer is likely to feel important and to express appreciation toward the employee. In this condition, the employee is more likely to be immersed in the needs of the customer, to be motivated to help the customer and to enjoy his/her work (i.e., feel good about managing effectively an interaction with a difficult customer). Given that flow is facilitated in conditions where employees have the available skills to meet the environmental challenges (Csikszentmihalyi, 1990), we argue that the use of deep acting signals employees' skills to successfully control the challenging and demanding emotion regulation process, thus facilitating flow experiences.

To conclude, surface acting initiates a resource-depleting process, while deep acting initiates a resource-preserving/gaining process. We argue that these processes extend to the home domain and relate to the recovery process via their association with the experienced need for recovery at the end of the workday. Need for recovery (i.e., the sense of being fed up with work and the need to take a distance from it; Sonnentag & Zijlstra, 2006) is central in the daily recovery process because it can be seen as the threshold through which work-related experiences spill over to the life after work and determine the degree to which one will finally manage to recover successfully at the end of the day (Xanthopoulou et al., 2014).

Through their differential associations with exhaustion and work-related flow, surface and deep acting will have respective, indirect effects on need for recovery. On days employees use surface acting, they become tired and do not enjoy their work. As a result, they feel a higher need for recovery at the end of the workday. In contrast, on days employees use deep acting, they preserve their energy, enjoy their work and consequently, feel a lower need for recovery. Exhausted employees have invested considerable energy in their job demands (Bakker et al., 2014) and, therefore, have a higher need to take a break from these demands (Kinnunen, Mauno, & Siltaloppi, 2010; Sonnentag & Fritz, 2007). Despite the fact that being in flow also requires investing cognitive resources, flow was found to relate positively to energy at the end of work and at bedtime (Demerouti, Bakker, Sonnentag, & Fullagar, 2012). Gross et al. (2011) showed that

positive events at work that involve both gaining and draining resources did not relate to fatigue at the end of the workday. On the basis of these findings, it could be argued that flow experiences—that do not only concern investing but also gaining resources—prevent from high levels of need for recovery at the end of the day. This is because the resources gained, while in flow, compensate for those that have been invested. On the basis of the above analysis, we formulate:

**Hypothesis 2.** *Daily surface acting associates indirectly and positively with need for recovery at the end of the workday through its positive relationship with exhaustion (a) and its negative relationship with work-related flow (b).*

**Hypothesis 3.** *Daily deep acting associates indirectly and negatively with need for recovery at the end of the workday through its negative relationship with exhaustion (a) and its positive relationship with work-related flow (b).*

#### 4 | NEED FOR RECOVERY AND RECOVERY AFTER WORK

Daily resource depletion at work that is indicated by a high need for recovery at the end of the workday has consequences for employee recovery at home because employees have limited resources that can be used in activities that facilitate recovery (Ten Brummelhuis & Bakker, 2012). We examine how emotion workers recover, on days that they experience a high need for recovery, by focusing on two recovery indicators: relaxation during leisure, and vigor at bedtime. Relaxation is a central recovery experience that is characterized by positive emotions of low activation (Sonnentag & Fritz, 2007). It is achieved when employees engage in deliberately chosen activities during leisure that facilitate relaxation of the body and the mind (e.g., mindfulness, passive, or low-effort activities like taking a walk). Because relaxation is mainly an emotional recovery experience, it was considered appropriate for the present study that concerns employees, who regulate their emotions on a daily basis. This is line with the Demand-Induced Strain Compensation model which states that well-being is improved when recovery experiences correspond to the type of demands that employees face at work (De Jonge, Spoor, Sonnentag, Dormann, & Van den Tooren, 2012). Namely, recuperating from emotionally demanding jobs is more likely through emotionally relaxing experiences.

The negative relationship between need for recovery at the end of the workday and relaxation during the evening can be explained by two mechanisms. The first is based on the work-home resources model (Ten Brummelhuis & Bakker, 2012) which suggests that when employees experience a high need for recovery, due to a demanding day at work, they have fewer resources left to invest in activities that will help them relax. These can be energetic, cognitive, or other resources (e.g., time). For instance, going for a light walk may facilitate relaxation after work (e.g., Sonnentag & Fritz, 2007), but this strategy would require investing time, as well as energy from employees. Even lying on the bed may require some cognitive resources that will allow employees to immerse in the activity and be mindful in order to relax. Mindfulness refers to being attentive to and aware of present-moment experiences in daily

life (Brown & Ryan, 2003). Marzuq and Drach-Zahavy (2012) found that relaxation experiences have beneficial effects for recovery only for individuals high in mindfulness. These results suggest that for relaxation to occur, a substantial amount of resources (e.g., cognitive resources like mindfulness) should be invested in low-effort activities. However, these resources are lacking when employees experience high levels of need for recovery at the end of the day.

The second mechanism that explains the negative link between need for recovery and relaxation is ruminative thinking that relates positively with need for recovery (Rydstedt, Cropley, Devereux, & Michalianou, 2009). According to the effort-recovery model (Meijman & Mulder, 1998), recovery is successful when the psycho-physiological systems that have been activated during work return to baseline, once the stressor is no longer present. However, when employees continue thinking about work during leisure, the same functional systems remain activated, prohibiting recovery experiences, such as relaxation. This is also in line with the stressor-detachment model (Sonnentag & Fritz, 2015) which states that high levels of daily job demands have immediate consequences for employees in the form of strain reactions and negative activation. Negative, cognitive activation may persist in the hours after work making it difficult for employees to relax because it stimulates negative thoughts about work that drain employees' resources.

Although one could argue that when employees are fed up with work at the end of the workday will try to avoid thinking or talking about work, Cropley and Zijlstra (2011)—based on the experiments on the “white bear” effect (Wegner, Schneider, Carter, & White, 1987)—explained that by trying to avoid negative thoughts, people make the thought more accessible thus, resulting in negative reactions (e.g., tension and annoyance) that are detrimental for recovery. Brosschot, Gerin, and Thayer (2006) theorized that the unfavorable consequences of stress are explained by the cognitive perseverance of the stressor that prolongs the harmful impact of the exposure to stress. Rumination or worrisome thinking refers to this cognitive perseverance and was found to relate to increased psychophysiological activity thus, undermining relaxation (for a review see, Brosschot et al., 2006). Thus, employees, who are in high need for recovery due to a demanding/stressful day at work, are less likely to relax because they may stay cognitively active, ruminating about their work demands. Indeed, Cropley and Millward Purvis (2003) showed that employees with highly strenuous jobs need more time to unwind from work and ruminate more about work-related issues in the hours after work than those with less strenuous jobs. Also, social conflicts with customers have been related to employees' inability to recover and negative work-reflection during leisure (Volmer, Binnewies, Sonnentag, & Niessen, 2012).

The prolonged cognitive activation after work may take up resources (i.e., energy or attention) from employees' leisure time, thus undermining relaxation. Also, employees will need to be able to refrain from thinking about work, so that they can focus on the recovery activity and relax. Time, energy, or cognitive resources may not be available when employees leave work while feeling used up (i.e., high need for recovery). Therefore, need for recovery does not necessarily relate with the mere ability to take a break because the stressor may still be present, thus using up energetic and cognitive resources that could otherwise be invested in activities that facilitate relaxation (Ten Brummelhuis & Bakker, 2012). These mechanisms may explain the

findings of previous studies showing that need for recovery relates negatively to low-effort activities (Sonnentag & Zijlstra, 2006) and relaxation (Kinnunen et al., 2010; Sonnentag & Fritz, 2007).

Vigor is a significant outcome of the recovery process because it indicates energy replenishment (Demerouti et al., 2012). Sonnentag and Natter (2004) showed that flight attendants, who managed to recover successfully after work, reported higher vigor at bedtime, and Sonnentag and Zijlstra (2006) found a negative association between need for recovery and well-being at bedtime. Taking all arguments together, it may be proposed that need for recovery relates negatively to vigor at bedtime because it impedes energy replenishment through relaxation during off-job time. Therefore, we hypothesize:

**Hypothesis 4.** *Need for recovery relates indirectly and negatively to vigor at bedtime via its negative association with relaxation during off-job time.*

## 5 | METHOD

### 5.1 | Procedure and participants

Fifty Dutch and 60 Polish employees from various, emotionally demanding, occupational contexts (i.e., education, health care, sales, and customer services) were approached by the fourth author in their workplaces and were asked to participate in a diary study on emotions at work. Participation was voluntary and anonymous, and employees were reassured that their data would be handled confidentially. All participants were recruited personally, except from the Polish health care employees, who were contacted via their managers. Those who agreed to participate were informed about the procedure and received the study package that included a letter by the researchers with detailed information on the study procedure, a general questionnaire, a diary booklet, and an empty envelope. Participants were asked to fill in the general questionnaire upon agreeing to participate in the study, and to fill in the diary starting either the following Monday (if they were working from Monday to Friday) or the next available day (if they had a different working schedule), for five successive workdays, twice a day. They were instructed to fill in the first part of the diary at the end of their workday and the second part before going to bed. Display rules and socio-demographic variables were measured with the general questionnaire, deep acting, surface acting, flow, exhaustion, and need for recovery were assessed with the first part of the daily diary (at the end of the workday), whereas relaxation and vigor were measured with the second part of the daily diary (at bedtime).

During data collection, the fourth author visited participants' workplaces on a regular basis to remind them to complete the diary on the requested moments. This was also done by the manager of the Polish health care employees. Two Dutch participants were working only 3 days/week and six participants (four Dutch and two Polish) were working only 4 days/week and thus, they filled out the diary for only 3 and 4 days, respectively. Completed questionnaires and diaries were placed in the envelope after finishing the study. Dutch participants were instructed to post the envelope back to the researchers (free of charge), while Polish participants were instructed to hand in the envelope to the fourth author.

In total, 34 (57% response rate) Polish and 16 (32% response rate) Dutch participants returned completed questionnaires ( $N = 50$ ; 45% total response rate) and diaries ( $N = 240$  study points). Participants reported that they filled in the first part of the diaries between 3:00 pm and 7:30 pm, while the time that they filled in the second part of the diaries varied from approximately 8:00 pm to midnight across the study days. The final sample was heterogeneous in terms of their job positions: 15 participants were health care professionals (i.e., doctors, physiotherapists, psychologists; 38% Dutch and 28% Polish), 18 were teachers (36% of the total sample; all Polish), and 15 were employed in managerial, administrative, and customer-service jobs (56% Dutch and 16% Polish). Ninety-two percent of the participants were women (100% in the Polish sample). Their mean age was 44 years ( $SD = 11.8$ ), their mean work experience in the current job position was 14.4 years ( $SD = 11.5$ ), and they worked on average 32 hr per week ( $SD = 10.3$ ). Dutch and Polish participants did not differ in terms of their age [ $t(48) = -1.56, p = .13$ ]. However, they did differ in terms of their job tenure [ $t(48) = -2.59, p < .05$ ] and the hours working per week [ $t(47) = 2.10, p < .05$ ], with Dutch being less experienced but working more hours per week than Polish employees. Most participants held a university degree (92%, including 13 Dutch and 33 Polish participants). Sixty percent of the participants were cohabiting with their partners (44% Dutch and 67% Polish), and 34% were living alone (five Dutch and seven Polish).

## 5.2 | Measures

Study material was distributed in Dutch and Polish. When validated Dutch and Polish scales were not available, a translation and back-translation procedure was applied from the original scales in English (Harkness, 2003).

### 5.2.1 | General questionnaire

*Display Rules* were assessed with the seven-item scale that was developed by Diefendorff, Croyle, and Gosserand (2005). Four items refer to the requirement to express positive emotions (e.g., "Part of my job is to make the customer feel good") and three to the requirement to suppress negative emotions (e.g., "I am expected to suppress my bad moods or negative reactions to customers"). One negatively phrased item (i.e., "My workplace does not expect from me to express positive emotions to customers as part of my job"), was reversed-coded before calculating the total score. Participants rated each item using a 5-point scale ranging from (1) = *strongly disagree* to (5) = *strongly agree* (Cronbach's  $\alpha = .76$ ).

*Socio-demographic variables* were also assessed.

### 5.2.2 | Diary survey

The items of the scales that were used in the diary were adapted to refer to the point of reference that was of interest for each variable (hours during work, hours after work, or this moment). Participants responded to all day-level measures on a 5-point scale ranging from (1) = *No, I disagree* to (5) = *Yes, I agree*.

*Deep Acting* was assessed with the three-item subscale of the emotional labor scale (ELS; Brotheridge & Lee, 2003). Items were adapted to refer to the preceding hours at work (e.g., "Today at work, I tried to

actually experience the emotions that I must show"). Cronbach's alphas were calculated for each day and ranged from .86 to .89 ( $M = .87$ ).

*Surface Acting* was assessed with another three-item subscale of the ELS (Brotheridge & Lee, 2003). An example item is: "Today at work, I have hidden my true feelings about a situation". Cronbach's alphas ranged from .59 to .80 ( $M = .73$ ) across the study days.

*Exhaustion* was assessed with four items on the basis of the rationale of the exhaustion subscale of the Maslach Burnout Inventory-General Survey (Schaufeli et al., 1996; e.g., "Today, working was really a strain for me"). Cronbach's alphas ranged from .75 to .83 ( $M = .79$ ) across the five study days.

*Work-Related Flow* was assessed with 10 items that were adapted from the scale developed by Bakker (2008). Three items capture *work enjoyment* (e.g., "Today, my work gave me a good feeling"), three items capture *absorption* (e.g., "Today, I was totally immersed in my work"), and four items capture *intrinsic motivation* (e.g., "Today, I got the motivation from the work itself and not from the reward for it"). Cronbach's alphas ranged from .82 to .91 ( $M = .86$ ) across the study days.

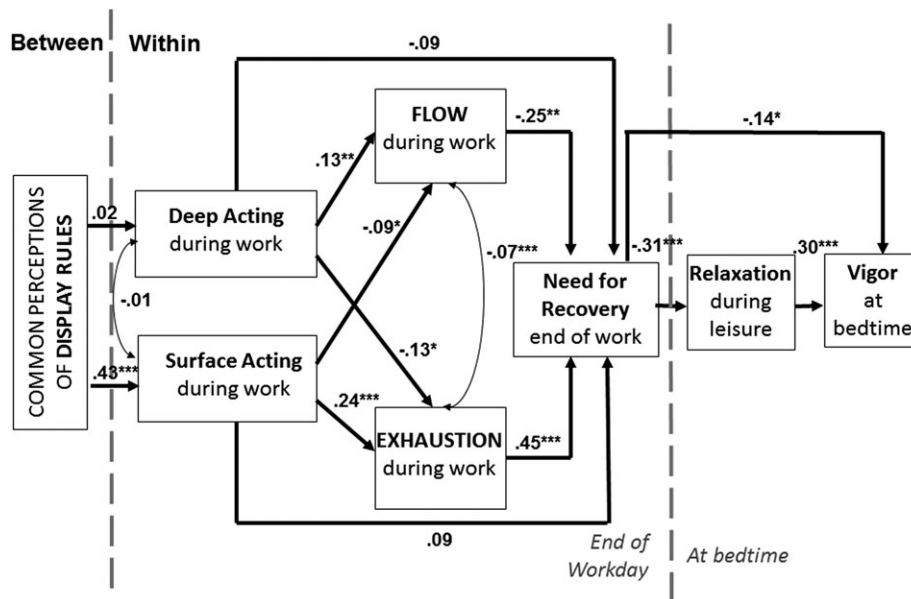
*Need for Recovery* was assessed with four items that were adapted from the respective subscale of the Questionnaire on Experience and Evaluation of Work (Van Veldhoven & Meijman, 1994). Example items are: "Right now, I cannot really show any interest in other people", and "I need more than one hour before I feel completely recuperated". Cronbach's alphas ranged from .80 to .86 ( $M = .84$ ) across the study days.

*Relaxation* was assessed at bedtime with the four-item relaxation subscale of the Recovery Experience Questionnaire (Sonnentag & Fritz, 2007) as adapted by Bakker, Sanz-Vergel, Rodríguez-Muñoz, and Oerlemans (2015) to capture daily recovery experiences after work (i.e., "Tonight (after work), I used the time to relax/ I kicked back and relaxed/ I did relaxing things/ I took time for leisure"). Cronbach's alphas ranged from .91 to .95 ( $M = .93$ ).

*Vigor* was measured at bedtime with the three-item vigor subscale of the Utrecht Work Engagement Scale (Schaufeli, Bakker, & Salanova, 2006). The items were adjusted in order to measure energy levels at the specific moment and not in relation to work. A sample item is "Right now, I feel strong and vigorous". Cronbach's alphas ranged from .76 to .90 ( $M = .84$ ).

## 5.3 | Strategy of analysis

To capture the nested structure of our data (i.e., daily repeated measurements nested within individuals), we performed multilevel path analyses with the Mplus 7 program (Muthén & Muthén, 2011). Given our primary interest in within-level processes, we modeled all daily relationships at the within-person level (Level 1) of analysis (see Figure 1). Only display rules and control variables (i.e., country membership) were entered at the between-person level and were linked to deep and surface acting. Model fit was assessed with the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), the Root Mean Square Error of Approximation (RMSEA), and the Standardized Root Mean Square Residual (SRMR). CFI and TLI values  $>.90$  indicate an acceptable fit (with values  $>.95$  being ideal; Brown, 2006), and RMSEA and SRMR values  $\leq .08$  indicate a reasonable fit to the data, whereas values  $\leq .05$  indicate excellent fit (Hu & Bentler, 1999). Indirect effects were calculated by using the MODEL CONSTRAINTS command of Mplus.



**FIGURE 1** Unstandardized estimates of the final model. Control effects of country membership on display rules, deep acting and surface acting were not included to avoid complexity. \*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$

We tested a two-level model with the daily measures at the first-level ( $N = 240$  diary points) and the individual persons at the second-level ( $N = 50$  participants). Power analysis with the optimal design program (Spybrook, Raudenbush, Liu, Congdon, & Martínez, 2008) for 50 clusters and a cluster size of 5 (i.e., 5 days per participant) indicated adequate power (i.e., 0.82) for the present study. All day-level predictor variables were centered to the individual mean across the study days in order to capture intra-individual, daily fluctuations, except for deep acting, and surface acting, which were centered at the grand mean. The reason for doing so was that we hypothesized differences of deep acting and surface acting between persons due to the general display rules of the organization (see Hypothesis 1). Person-mean centering in deep and surface acting would preclude such cross-level effects, because it would remove all between-person variance. Person-level predictor variables (i.e., display rules) were centered to the grand mean.

We treated the two national samples as one unique sample because we had no reasons to expect that Dutch and Polish employees would exhibit significant differences in their daily variations in the variables under study. Nevertheless, we controlled for country membership by linking it to display rules, deep and surface acting (i.e., all variables that were allowed to be explained by between-person differences), because there are cultural differences on how people evaluate the appropriateness of emotional expressions in different social situations (Matsumoto, 1990).

## 6 | RESULTS

### 6.1 | Preliminary analyses and descriptive statistics

To support the use of a two-level model, we first examined if for all day-level variables sufficient amounts of variance could be explained by both levels of analysis. For each day-level variable, we conducted a deviance ( $-2 \times \log$ ) difference test, and we compared a one-level intercept-only

(null) model (i.e., days) with a two-level intercept-only model (i.e., days nested in persons). Table 1 presents the results of the  $\Delta$ -deviance tests for all day-level variables, as well as the intraclass correlation coefficients ( $\rho$ ) that were calculated on the basis of the two-level intercept-only models. The  $\rho$  indicates the amount of variance that may be explained by between-person variations. Table 1 shows that the two-level, null model fit better to the data than the one-level null model for all variables. Also, the variance that could be attributed to between-person variations ranged from .25 to .64, leaving substantial amounts of variance to be explained by within-person changes in all study variables. All in all, these results support the use of a two-level model for hypothesis testing.

Table 2 presents mean scores, standard deviations, and correlations between the study variables both at the between- and at the within-person level of analysis. All correlations were in the expected direction. Given that the correlation between exhaustion and need for recovery was high, we performed confirmatory factor analyses to examine the distinctiveness of these constructs. Following Bolger, Davis, and Rafaeli (2003), we used pooled within-subject data after centering on each subject's mean. Results supported that exhaustion

**TABLE 1** Comparison of null models with one and two levels:  $\Delta$ -deviance tests and intraclass correlation ( $\rho$ ) coefficients ( $N = 50$  participants, and  $N = 240$  study points)

Variables	$\Delta$ -deviance ( $df = 1$ )	$\rho$
Deep acting	133.35***	.64
Surface acting	28.87***	.29
Work-related flow	114.65***	.60
Exhaustion	43.50***	.37
Need for recovery	61.85***	.46
Relaxation	19.15***	.25
Vigor at bedtime	70.12***	.48

Note.  $df$  = degrees of freedom.

\*\*\* $p < .001$ .

**TABLE 2** Means, standard deviations, and correlations between the study variables, ( $N = 50$  participants, and  $N = 240$  study points)

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 Age	43.94	11.84	-													
2 Gender	.92	.27	.11	-												
3 Job tenure	14.34	10.89	.62**	.11	-											
4 Working hours/week	32.01	10.31	-.27	-.20	-.20	-										
5 Country membership	.68	.47	.22	.43**	.35*	-.29*	-									
6 Job sector	2.25	1.37	-.14	-.44**	-.34*	.22	-.68*	-								
7 Display rules	3.34	.66	.04	-.17	-.04	.02	-.16	.09	-							
8 Deep acting	3.20	.96	.52**	.13	.29	-.32*	.35*	-.24	-.01	-	-.16*	.25**	-.21**	-.25**	.03	.15*
9 Surface acting	2.06	.64	-.17	-.18	.01	.27	-.17	.31	.45*	-.26	-	-.31**	.37**	.19**	-.11	-.11
10 Work-related flow	3.39	.68	.39	.37*	.29	-.18	.41*	-.55*	-.21	.34*	-.44**	-	-.43**	-.35**	.11	.39**
11 Exhaustion	1.92	.62	-.31	.07	-.18	.25	-.20	.14	.16	-.26	.48**	-.52**	-	.63**	-.30**	-.27**
12 Need for recovery	2.12	.65	-.08	.13	-.04	.19	-.09	-.00	-.11	-.28	.35*	-.35*	.74**	-	-.24**	-.25**
13 Relaxation	3.73	.59	.03	-.11	-.10	-.03	-.01	.04	-.05	.01	-.15	.08	-.50**	-.25	-	.39**
14 Vigor at bedtime	2.55	.66	.17	.14	-.10	.13	.06	-.12	.12	.39*	-.06	.43**	-.24	-.21	.44**	-

Note. Gender: 0 = Men, 1 = Women; Country membership: 0 = Dutch, 1 = Polish; Job sector: 1 = Education, 2 = Health, 3 = Management, 4 = Administration, 5 = Customer service; Correlations below the diagonal are person-level correlations, where day-level data was averaged across the 5 days; Correlations above the diagonal are at the day-level ( $N = 240$ ).

\*\* $p < .01$ . \* $p < .05$ .

and need for recovery were related but distinct factors since the proposed two-factor model fit well to the data ( $\chi^2 = 49.18$ ,  $df = 19$ ,  $\chi^2/df = 2.59$ ; CFI = .98, RMSEA = .08), and it was better than the alternative one-factor model [ $\Delta\chi^2(1) = 29.20$ ,  $p < .001$ ]. Socio-demographic variables did not relate consistently with the study variables and were excluded from further analyses. We only controlled for country membership as explained in the strategy of analysis section.

## 6.2 | Hypothesis testing

To test the study hypotheses, a 2-1-1-1-1 model was applied to the data. In particular, general display rules were entered as a variable at the between-person level of analysis and all day-level measures (i.e., deep acting, surface acting, flow, exhaustion, need for recovery, relaxation during leisure time, and vigor at bedtime) were entered at the within-person level. The model included the following paths: (a) two paths from general display rules to deep acting and surface acting; (b) four within-level paths from deep and surface acting to flow and exhaustion; (c) two within-level paths from flow and exhaustion to need for recovery, (d) a within-level path from need for recovery to relaxation, and (e) a within-level path from relaxation to vigor. This model was compared with an alternative model that was similar to the hypothesized model but also included two direct, within-level paths from deep and surface acting to need for recovery, and a direct within-level path from need for recovery to vigor. We did this in order to account for alternative direct effects that would suggest partial mediation. The fit of the two models to the data was compared with the Satorra-Bentler scaled chi-square difference test (Satorra & Bentler, 2010) that corrects for scaling issues to better approximate chi-square under non-normality. The fit of the hypothesized model ( $\chi^2 = 25.97$ ,  $df = 11$ ,  $p = .01$ ; CFI = .94, TLI = .84, RMSEA = .08, SRMR-within = .06, SRMR-between = .002) was worse than the fit of the alternative model that also included the direct paths [Sattora-

Bentler Scaled Chi-Square Difference (TRd) = 13.17,  $df = 3$ ,  $p < .01$ ]. This was because the direct path from need for recovery to vigor (though not hypothesized) remained significant when the indirect effect was taken into account (see Figure 1). Thus, the model depicted on Figure 1 was considered as the final model in our analyses.

The final model fit well to the data ( $\chi^2 = 13.08$ ,  $df = 8$ ,  $p = .11$ ; CFI = .98, TLI = .93, RMSEA = .05, SRMR-within = .04, SRMR-between = .001). Figure 1 shows unstandardized estimates and significance levels of the examined relationships. Hypothesis 1 stated that employees' general perceptions of display rules will relate positively to daily deep (H1a) and surface (H1b) acting. Results showed that display rules associated significantly with surface acting (estimate = .43,  $SE = .12$ ,  $t = 3.56$ ,  $p < .001$ ), but not deep acting (estimate = .02,  $SE = .20$ ,  $t = .09$ ,  $p = .93$ ). Thus, Hypothesis 1b was supported, while Hypothesis 1a was rejected. Country membership related positively to deep acting (estimate = .75,  $SE = .27$ ,  $t = 2.77$ ,  $p < .01$ ), suggesting that Polish employees reported higher levels of deep acting. However, country membership did not relate either to surface acting (estimate = .04,  $SE = .17$ ,  $t = .21$ ,  $p = .83$ ) or display rules (estimate = -.22,  $SE = .20$ ,  $t = -1.13$ ,  $p = .26$ ).

According to Hypothesis 2, daily surface acting would have a positive, indirect relationship with daily need for recovery via its positive relationship with daily exhaustion (2a) and its negative relationship with daily flow (2b). Results showed that surface acting related positively to exhaustion (estimate = .24,  $SE = .051$ ,  $t = 4.74$ ,  $p < .001$ ) and negatively to flow (estimate = -.09,  $SE = 0.04$ ,  $t = -2.48$ ,  $p < .05$ ). In turn, exhaustion related positively (estimate = .45,  $SE = .06$ ,  $t = 7.79$ ,  $p < .001$ ), whereas flow related negatively (estimate = -.25,  $SE = .078$ ,  $t = -3.17$ ,  $p < .01$ ) to need for recovery. The indirect effect of daily surface acting to daily need for recovery via increased levels of daily exhaustion was significant (estimate = .11,  $SE = .03$ ,  $t = 4.04$ ,  $p < .001$ ; CI (95%) = .06 to .16), which supports Hypothesis 2a. The indirect effect from daily surface acting to need for recovery via low



levels of flow was marginally significant (estimate = .023,  $SE = .012$ ,  $t = 1.95$ ,  $p = .051$ ;  $CI(95\%) = .001$  to  $.05$ ), which provides some support for Hypothesis 2b. As shown in Figure 1, the direct relationships between surface and deep acting, on the one hand and need for recovery, on the other hand, were not significant, supporting indirect effects.

According to Hypothesis 3, daily deep acting was expected to have a negative, indirect relationship with daily need for recovery via its negative relationship with daily exhaustion (3a) and its positive relationship with daily flow (3b). In line with expectations, results showed that deep acting related negatively to daily exhaustion (estimate =  $-.13$ ,  $SE = .06$ ,  $t = -2.31$ ,  $p < .05$ ) and positively to daily flow (estimate =  $.13$ ,  $SE = .04$ ,  $t = 3.12$ ,  $p < .01$ ). In addition, daily deep acting had a negative, indirect relationship with daily need for recovery via (a) decreased daily levels of exhaustion (estimate =  $-.06$ ,  $SE = .03$ ,  $t = -2.22$ ,  $p < .05$ ;  $CI(95\%) = -.11$  to  $-.01$ ) and (b) increased levels of daily flow (estimate =  $-.03$ ,  $SE = .01$ ,  $t = -2.22$ ,  $p < .05$ ;  $CI(95\%) = -.06$  to  $-.01$ ). These results support Hypothesis 3.

Hypothesis 4 stated that need for recovery relates negatively to vigor at bedtime via its negative relationship with relaxation during leisure time. Results showed that need for recovery related negatively to relaxation during leisure time (estimate =  $-.31$ ,  $SE = .08$ ,  $t = -3.94$ ,  $p < .001$ ). Also, relaxation during leisure related positively to vigor at bedtime (estimate =  $.30$ ,  $SE = .05$ ,  $t = 6.53$ ,  $p < .001$ ), while there was a significant, negative indirect relationship between need for recovery and vigor at bedtime via reduced relaxation during leisure time (estimate =  $-.09$ ,  $SE = .03$ ,  $t = -3.38$ ,  $p < .001$ ;  $CI(95\%) = -.15$  to  $-.04$ ). These results support Hypothesis 4. However, as explained, the direct relationship between need for recovery and vigor remained significant, when relaxation was taken into account, indicating a partial mediating effect. Note that results did not change when country membership was not controlled for in the analyses.

### 6.3 | Additional analyses

Although not hypothesized, we performed additional analyses to test for potential sequential indirect relationships initiated from display rules  $\rightarrow$  deep/surface acting  $\rightarrow$  exhaustion/ flow  $\rightarrow$  need for recovery  $\rightarrow$  relaxation  $\rightarrow$  vigor. None of the indirect effects from display rules to vigor was significant, which is not surprising when considering that this sequence concerns complex effects from between-level (i.e., display rules) to within-level factors. Thus, we have examined potential sequential effects only at the within-person level of analysis (i.e., from deep and surface acting to vigor via first, exhaustion and flow next, need for recovery, and finally, relaxation). The indirect and negative relationship between surface acting and vigor at bedtime via exhaustion, need for recovery, and relaxation during leisure time was significant (estimate =  $-.01$ ,  $SE = .004$ ,  $t = -2.59$ ,  $p < .01$ ;  $CI(95\%) = -.02$ ,  $-.01$ ). However, the indirect and negative relationship between surface acting and vigor at bedtime via flow, need for recovery, and relaxation during leisure time was not significant (estimate =  $-.002$ ,  $SE = .001$ ,  $t = -1.69$ ,  $p = .09$ ;  $CI(95\%) = -.01$ ,  $.00$ ). As for deep acting, the indirect and positive relationship between deep acting and vigor at bedtime via either exhaustion (estimate =  $.006$ ,  $SE = .003$ ,  $t = 1.85$ ,  $p = .064$ ;  $CI(95\%) = .00$ ,  $.01$ ) or flow (estimate =  $.003$ ,  $SE = .002$ ,  $t = 1.86$ ,

$p = .063$ ;  $CI(95\%) = .00$ ,  $.01$ ), then need for recovery and consequently, relaxation were not significant.

## 7 | DISCUSSION

The main purpose of this diary study was to investigate the process through which employees recover from emotional labor. Responding to the call for understanding better the role of emotion regulation for employee well-being (Holman et al., 2008), we tested a model proposing that the display rules set by an organization result in daily emotional labor in the form of deep or surface acting. These emotion regulation strategies, in turn, relate differentially to need for recovery through work-related exhaustion and flow. In addition, need for recovery was expected to relate with relaxation during leisure and consequently, vigor at bedtime.

Results supported most of the hypothesized direct and indirect relationships. In line with the emotional labor (Grandey, 2000; Holman et al., 2008; Morris & Feldman, 1996) and recovery (Geurts & Sonnentag, 2006; Sonnentag & Fritz, 2015; Zijlstra et al., 2014) literatures and in agreement with the main assumptions of the work-home resources model (Ten Brummelhuis & Bakker, 2012), our findings showed that surface acting related positively to daily need for recovery mainly via increased levels of daily exhaustion, while deep acting related negatively to need for recovery via reduced levels of exhaustion and increased levels of work-related flow. Next, need for recovery at the end of the workday associated negatively with vigor at bedtime because of employees' inability to relax after work. Importantly, we also found a negative, indirect relationship between daily surface acting and vigor at bedtime via the consecutive effects of high exhaustion, high need for recovery and reduced relaxation experiences.

These findings integrate the emotional labor and recovery literatures and add value by unfolding—for the first time—the processes through which emotional labor relates to the daily recovery process. Our results are important for theory and practice because they clearly show that surface acting impairs, whereas deep acting promotes work-related well-being and consequently, need for recovery on a daily basis. Emotion regulation strategies shape (need for) recovery levels at the end of the workday by either using up or preserving and gaining resources (Ten Brummelhuis & Bakker, 2012). Resource levels at the end of the workday indicate whether recovery experiences (i.e., relaxation) can take place thus, defining employees' energy levels (i.e., vigor) at bedtime.

### 7.1 | Display rules and daily emotion regulation strategies

Our findings supported results from previous studies at the inter-individual level of analysis (Mesmer-Magnus et al., 2012), showing that the display rules that are set by the organization urge employees to engage in surface acting strategies in order to adhere to the desired emotional expressions. Our results supported this relationship by focusing on day-level indicators of emotion regulation strategies and showed that employees who should adhere to display rules are likely to fake the required emotions at work on a daily basis.

In contrast, our results did not support the positive relationship between display rules and daily deep acting that has been revealed by previous studies at the inter-individual level of analysis (Mesmer-Magnus et al., 2012). Furthermore, our findings are the exact opposite of those reported by Grandey (2003), who found a positive link between display rules and deep acting and a nonsignificant link between display rules and surface acting. The unexpected null relationship between display rules and deep acting may be attributed to the fact that, when employees engage in deep acting, they manage to feel the emotions that are required that is likely to enhance their sense of authentic self (Brotheridge & Lee, 2002). Due to this sense of authenticity, employees are likely to dissociate the display rules that are set by their organization from their actual emotional expressions that result from deep acting. This finding challenges the homology of the positive relationship between display rules and deep acting across levels of analysis by suggesting that this relationship exists at the between-person of analysis but not when daily deep acting is in question. Perhaps, on the day-level, deep acting is more prone (than surface acting) to proximal antecedents, such as the energy employees have at the beginning of the workday (Van Gelderen, Bakker, Konijn, & Binnewies, 2014), and less dependent on more distal antecedents such as display rules. However, more research, particularly on the role of potential moderators, is needed to establish robust conclusions regarding the invariance of this relationship across levels of analysis.

## 7.2 | The differential role of deep and surface acting for recovery

We integrated the emotional labor and the recovery literatures to shed light to the psychological processes that explain daily recovery from emotional labor. To explain the link between emotion regulation strategies and the recovery process, we used the work-home resources model (Ten Brummelhuis & Bakker, 2012) as a theoretical framework. Accordingly, daily resource depletion at work (by means of high exhaustion and low flow) due to surface acting was expected to have negative consequences for employees' need for recovery, thus leaving limited resources to invest in order to relax during leisure. In contrast, daily resource conservation (i.e., low exhaustion) and resource gaining (i.e., flow) at work due to deep acting were expected to have positive consequences for employees' need for recovery at the end of work, thus leaving resources (e.g., time, energy) available to invest in recovery experiences.

As concerns the emotional labor literature, we extend past research on the differential effects of deep and surface acting: (a) by testing these effects on both exhaustion and work-related flow simultaneously; and (b) by linking these differential effects with employee well-being during work, and (need for) recovery after work. Regarding the first point, most studies on the differential effects of the emotional regulation strategies have concerned employee strain (e.g., exhaustion), affective job attitudes (e.g., job satisfaction), or performance and productivity (Hülshager & Schewe, 2011; Mesmer-Magnus et al., 2012), thus, neglecting potential links with motivational aspects of employee well-being, with a few exceptions (i.e., Bechtold, Rohrman, De Pater, & Beersma, 2011; Yagil, 2012). Our study adds to this discussion by proposing and testing an overarching model that accounts for

the differential role of deep and surface acting for both energetic and motivational indicators of employee well-being, simultaneously.

Moreover, our findings explain why deep and surface acting have differential effects for employee well-being by showing that through surface acting, employees deplete their resources and become more exhausted (Mesmer-Magnus et al., 2012). Through deep acting, employees either persevere resources by avoiding a discrepancy between the felt and expressed emotion, and stay energetic (Hülshager & Schewe, 2011), or they gain resources by sustaining positive social interactions at work (Brotheridge & Lee, 2002; Côté, 2005; Grandey, 2003) that help them to become absorbed in their work, to enjoy it, and to carry it out for the intrinsic pleasure of it. It should be noted that even when confronted with an angry customer, using deep acting to express the positive emotions (e.g., calmness) that are required by the organization may facilitate problem-solving behaviors that eventually turn the interaction with the client into a positive experience (e.g., Kiffin-Petersen, Murphy, & Soutar, 2012). Although deep acting related to need for recovery via both reduced exhaustion and increased flow, surface acting related to need for recovery only through high levels of exhaustion—the indirect effect from surface acting to need for recovery via flow was very small and only marginally significant. These findings suggest that surface acting is mainly effortful and not demotivating because employees need to fake emotions that are not truly felt—the more they experience this discrepancy, the more energetic resources they need to use to keep up the required emotional appearances (Hülshager & Schewe, 2011).

Next to underscoring the role of motivation in understanding the differential role of deep and surface acting for employees, a second contribution of this study is that it links emotional labor to employees' need for recovery at the end of work that, in turn, may relate negatively to vigor at bedtime through reduced relaxation experiences during leisure time. In line with recent studies suggesting that emotional labor spills over to employees' life after work on a daily basis (e.g., Sanz-Vergel et al., 2012), our study showed that emotional labor, and particularly surface acting, impedes employee relaxation activities and in turn, vigor at bedtime on a daily basis through its positive association with exhaustion at work and need for recovery at the end of the workday. In line with the work-home resources model (Ten Brummelhuis & Bakker, 2012) and the stressor-detachment model (Sonnentag & Fritz, 2015), these results reveal that daily resource depletion at work (due to surface acting) impedes employee recovery at home. This is because surface acting exhausts employees and makes them fed up at the end of the workday thus, leaving limited resources (i.e., time and energy) to invest in relaxation experience, or making negative rumination about work more likely (Cropley & Zijlstra, 2011).

Establishing the link between emotional labor and the recovery process is important because it allows explaining how a significant part of the workforce may be protected from a high need for recovery at the end of the workday in order to relax and consequently, refill their energy at the end of the day. The fact that the full indirect effect from emotion regulation strategies to vigor at bedtime was supported only for surface acting (via exhaustion, need for recovery, relaxation, and vigor) but not for deep acting can be explained on the basis of the classical study of Baumeister, Bratslavsky, Finkenauer, and Vohs (2001). These scholars showed that negative emotional experiences (such as

surface acting) last longer and have more severe consequences than positive affective experiences do.

Our study also contributes to the recovery literature in two ways. First, our results add value by focusing on the role of emotional regulation for recovery. In their analysis, Zijlstra et al. (2014) argued that regulation is an important, yet neglected, concept in the recovery process. Accordingly, trying to restore the resources that have been used up at work is a dynamic process that requires the act of controlling or regulating one's self. Although Zijlstra and colleagues mainly referred to how regulating one's psychophysiological state may facilitate recovery, our study suggests that the way of regulating one's emotions at work may also relate to need for recovery indirectly via work-related well-being. Our results contribute to this discussion by showing that, next to the regulation of energy, emotion regulation is also relevant for the recovery process.

Second, although it has been proposed that need for recovery is central in the recovery process, only few previous studies have focused on its role (Sonnentag & Zijlstra, 2006). Our results emphasize that need for recovery is an important component in the recovery process because it functions as the threshold that determines the extent to which work-related experiences facilitate or impede recovery (Xanthopoulou et al., 2014). We showed that need for recovery helps understanding whether recovery (i.e., vigor at bedtime) will be successful at the end of the day because it indicates whether employees will have energetic, cognitive, or other resources to invest in relaxing activities after work and consequently, feel energetic (Ten Brummelhuis & Bakker, 2012). As far as we know, this is the first study to show that relaxation mediates the need for recovery—recovery link on a daily basis.

### 7.3 | Strengths, limitations, and avenues for future research

A strong point of the study is the heterogeneity of our sample not only in terms of emotional labor jobs but also in terms of national contexts. However, the relatively small number of participants at the individual level of analysis is not appropriate for cross-national comparisons. Thus, country differences found in the data should be considered with caution because the two national samples were not comparable in terms of their characteristics. For instance, Polish employees reported higher levels of daily deep acting than Dutch employees. This is less likely to be attributed to cultural characteristics and more likely to be attributed to the job types that were identified in the two national samples. For example, the Polish sample consisted mainly of teachers and health care professionals that are perhaps more inclined to engage in deep acting on a daily basis because expressing inauthentic emotions in more personalized service contexts may have more harmful outcomes for service recipients than in more standardized contexts. Nevertheless, recruiting employees from different countries adds to the ecological validity of the study findings. On a related note, the limited number of participants at the highest level ( $N = 50$ ) did not allow modeling the hypothesized process at the between- and the within-person levels simultaneously. Thus, it would be important for future studies to test the supported relationships across levels of analysis in order to result to more robust conclusions regarding their invariance (see Preacher, Zyphur, & Zhang, 2010).

We argue that the psychological processes that have been supported by our findings are valid not only for those jobs that have been regarded traditionally as emotional labor jobs (i.e., in the service and health sectors; Hochschild, 1983) but also for every job that is characterized by emotionally demanding interactions (e.g., with colleagues or supervisors), where employees are required to regulate their emotions to some extent. Nevertheless, the composition of our sample did not allow for comparisons between different occupational groups (i.e., health-care vs. customer-service employees). Future studies could replicate these findings by recruiting a substantial number of participants from different types of emotional labor jobs. Furthermore, study participants were predominantly female which raises concerns as to whether our results can be generalized to the male population. For instance, the finding that deep acting related both to work-related flow and exhaustion, whereas surface acting related mainly to exhaustion may be attributed to the fact that women engage in deep acting more than men (Cottingham, Erickson, & Diefendorff, 2015). Therefore, future studies should test the validity of our findings across men and women. Also, future studies should consider the role of lack of resources and rumination as mechanisms that may explain the negative relationship between need for recovery and relaxation. The fact that our theorizing was based on these mechanisms, which were, however, not tested, is clearly a study limitation.

Collecting data at two points during each day (i.e., at the end of the workday and before sleep) and with different times within the day as reference points is a strong aspect of the study design. In this way, we achieved a temporal separation between the different constructs that were assessed in the hypothesized model, thus minimizing common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Nevertheless, certain variables (i.e., emotion regulation strategies, exhaustion, flow, and need for recovery) were evaluated at the same point of the day by employee self-reports. This may raise concerns about the proposed sequence in the hypothesized model. To counteract such concerns, participants were asked to evaluate each variable with a different time period as a reference point. To this end, emotion regulation strategies and well-being were assessed with the preceding hours at work as a point of reference, and participants evaluated their momentary need for recovery at the end of the workday. Similarly, relaxation was assessed with having the preceding evening as a point of reference, and employees assessed their momentary vigor at bedtime. Future studies could adopt more elaborate experience sampling designs with more measurement points within each day in order to fully overcome this limitation. Drawing on our findings, and the findings of Sanz-Vergel et al. (2012), who showed that engaging in surface acting at work may enhance surface acting at home on a daily basis, future studies should also investigate how emotion regulation at work and at home associate with the recovery process.

Finally, the fact that paper-and-pencil and not electronic diaries have been used raises concerns regarding participants' alignment with the study protocol. Participants' self-reports on the time that they filled in the diaries suggest that compliance rates were high. Also, the substantial within-person variations that have been recorded in all study variables somewhat counteract concerns that participants may have filled in the diaries at once or only a few points in time. Nevertheless,

future studies that will use electronic diaries could test the external validity of our findings across different methods of data collection.

## 7.4 | Practical implications and overall conclusion

Our study suggests that emotional labor is not necessarily harmful for employees. Whether it will be detrimental or not heavily depends on which strategy employees use to regulate their emotions on a daily basis. Our findings show that employees feel better on days that they use deep acting rather than surface acting in order to adhere with the organizationally desired emotional expressions. This is because deep acting protects from exhaustion and relates to flow and as a result prevents from a high need for recovery at the end of the workday. These findings are informative for practical implications that aim at helping employees to recover from emotional labor on a daily basis. Organizations that expect from their employees to exhibit specific emotions are advised to try actively to prompt employees to avoid engaging in surface acting. Instead, employees should recognize the beneficial role of avoiding the incongruence between the required and felt emotions and preserve their resources. On the basis of the findings of the emotion-regulation intervention that has been evaluated by Totterdell and Parkinson (1999), it can be proposed that trainings aiming to promote deep acting should mainly focus on cognitive reappraisal since this strategy was associated with better outcomes for employees. By reappraising the situation at hand and by recognizing that expressing specific emotions preserves or even helps to gain resources, employees will be in a better position to manage emotional labor successfully and recover.

Our findings emphasize the dynamic nature of emotion regulation strategies that underscores the need to promote deep acting on a day-to-day basis. "Just-in-time" adaptive interventions (Spruijt-Metz & Nilsen, 2014) could provide the framework for real-time (or near-time) feedback on emotional regulation. For instance, when supervisors foresee that an emotionally demanding interaction will take place, they may help their subordinates to reappraise the situation that they are about to face. Such intervention programs could complement organizational interventions aiming at promoting and sustaining successful emotional-regulation strategies at the trait-level. Furthermore, redesign programs should place emphasis on (re)creating jobs that promote a fit between the person and the organizationally required emotional expressions, in a way that it will be less burdening for employees to comply with the demands of emotional labor (Diefendorff, Greguras, & Fleenor, 2016).

To conclude, emotion regulation strategies have differential effects for employee work-related well-being during work and recovery after work. Engaging in surface acting on a daily basis impairs employee well-being during work and may impede the process of recovery after work because surface acting initiates an energy draining process. In contrast, engaging in deep acting initiates a resource-preserving/gaining process that makes employees feel better and motivated during work that aids recovery after work. All in all, emotion regulation strategies matter for employees daily, and thus detrimental strategies such as surface acting should be avoided to maintain a healthy and motivated emotional labor workforce.

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