Routledge
Taylor & Francis Group

Does job complexity mitigate the negative effect of emotion-rule dissonance on employee burnout?

Bettina Kubicek and Christian Korunka

Department of Applied Psychology: Work, Education and Economy, Faculty of Psychology, University of Vienna, Universitaetsstrasse 7, Vienna, 1010 Austria

ABSTRACT
In interactions with clients or patients, human service workers are at risk of experiencing discrepancies between felt and organizationally mandated emotions (i.e. emotion-rule dissonance). Given the documented detrimental effects of such discrepancies on employee strain, the present study investigated whether job complexity mitigates the relation between emotion-rule dissonance and employee burnout using data from a two-wave panel study of eldercare workers ($N = 583$, 16-month time lag). Structural equation modelling revealed that emotion-rule dissonance at Time 1 preceded emotional exhaustion and depersonalization at Time 2. Beyond that, employees whose work offered job complexity were found to suffer less from emotional exhaustion and depersonalization when encountering discrepancies between felt and stipulated emotions compared to employees who conducted noncomplex work. Thus, designing complex tasks appears to be a crucial starting point for alleviating employee burnout in jobs that provoke emotion-rule dissonance.

Introduction

The management of emotions is an important aspect of human service work in general and of eldercare work in particular. Nurses for the elderly should, for example, express sympathy and hide anger, disgust, or resentment in order to maintain positive care relations and to comply with professional standards. This requirement to manage one's emotions in the workplace was termed *emotional labour* by sociologist Arlie Hochschild. In her seminal book, *The managed heart* (1983), she defined emotional labour as "the management of feeling to create a publicly observable facial and bodily display" (p. 7). Hochschild impressively describes that employees whose "labor requires [them] to induce and suppress feeling in order to sustain the outward countenance" (p. 7) are at risk of experiencing emotional dissonance (i.e. a discrepancy between the emotions felt and those expressed to meet organizational or professional display rules), which in turn contributes to feelings of alienation and ill health.

Since the publication of *The managed heart*, the negative effects of emotional dissonance for employees and organizations have been widely studied (for reviews, see Bono

CONTACT Bettina Kubicek ✉ bettina.kubicek@univie.ac.at

& Vey, 2005; Hülsheger & Schewe, 2011; Zapf, 2002). A recent meta-analysis suggests that the perceived discrepancy between felt and required emotions compromises task performance and impairs employee well-being by increasing the risks of emotional exhaustion, depersonalization, and psychosomatic complaints as well as by reducing feelings of personal accomplishment, job satisfaction, and organizational attachment (Hülsheger & Schewe, 2011). Yet, because these findings rely mainly on cross-sectional data, the causal relation between emotional dissonance and employees' personal and job-related well-being is still under debate. On the one hand, the stressor approach posits that emotional dissonance as a job stressor precedes strain and ill-being (e.g. Zapf, 2002). On the other hand, strain and ill-being might make it more difficult for employees to automatically feel positively about their customers and might heighten the risk of experiencing emotional dissonance. Hülsheger and Schewe (2011) therefore concluded that more longitudinal studies are needed to clarify the emotional labour process to gain a deeper understanding of its antecedents and consequences.

Consequently, one purpose of the present study was to examine the relation between emotional dissonance and employee burnout by drawing on a complete two-wave study design (Zapf, Dormann, & Frese, 1996). In line with the stressor approach, we propose that the association between emotional dissonance and burnout stems only from effects of emotional dissonance on burnout but not from reversed effects of burnout on emotional dissonance. If we were able to find empirical evidence for this proposition, the question would arise as to whether job characteristics exist which mitigate the negative effects of emotional dissonance on employee burnout. Given the fact that human service work not only entails regulating one's emotions, but is often quite complex, we examined job complexity as a moderator of the link between emotional dissonance and burnout. We propose that job complexity operates as a buffer against the negative effects of emotional dissonance on burnout. The propositions on the main and interactive effects were tested among a sample of eldercare workers.

The conceptualization of emotional dissonance

Emotional dissonance was originally conceptualized as the discrepancy between employees' felt emotions and the emotions expressed to meet organizational and professional standards (Hochschild, 1983). In the studies that followed, different aspects of this initial definition were emphasized, resulting in two divergent research streams (Holman, Martinez-Iñigo, & Totterdell, 2008). In the *stressor approach*, which is rooted in action theory, emotional dissonance is considered to be an external stressor arising in customer–employee interactions (van Gelderen, Heuven, van Veldhoven, Zeelenberg, & Croon, 2007; Zapf, 2002). Zapf (2002) argues that job environments vary in the extent to which they demand compliance with display rules and in the frequency with which discrepancies between felt and organizationally stipulated emotions occur, leaving employees with different requirements for handling emotional dissonance. Depending, for example, on the type, length or situative context of customer–employee interactions, jobs entail different risks of experiencing dissonance-provoking situations.

In the *emotion regulation approach*, emotional dissonance is assumed to result from strategies used to regulate one's emotional expression (e.g. Grandey, 2000; van Dijk & Kirk Brown, 2006). Usually, two emotion regulation strategies are considered in this type

of research, namely "deep acting" and "surface acting" (Hochschild, 1983). Deep acting is directed at altering the affective state itself, helping employees to feel the required emotion. Surface acting is, by contrast, directed at changing the emotional expression. Without feeling it, employees aim at showing the required emotion. Consequently, surface acting is assumed to result in a discrepancy between felt and displayed emotions and thus in emotional dissonance.

To distinguish between the two conceptualizations of emotional dissonance, various researchers recommended using a more distinct terminology (Holman et al., 2008; Rubin, Staebler Tardino, Daus, & Munz, 2005). Emotional dissonance as conceptualized in the emotional regulation approach should be referred to as *emotion/emotive dissonance* because it captures the discrepancy between internal feelings and their external expressions. Emotional dissonance as conceptualized in the stressor approach should be referred to as *emotion-rule dissonance* because it captures the discrepancy between felt emotions and emotions required by display rules. As we were interested in emotional dissonance as a job stressor, we focused on emotion-rule dissonance and its association with burnout.

Emotion-rule dissonance and burnout

Given the fact that there is still debate on whether burnout is best represented by a combination of emotional exhaustion, depersonalization, and reduced professional efficacy (Bresó, Salanova, & Schaufeli, 2007), we followed Schaufeli and Taris' (2005) recommendation of conceptualizing burnout as a work-related syndrome that at least includes an energetic (emotional exhaustion) and a motivational (depersonalization/cynicism) component. Empirical findings, in general, document associations between emotion-rule dissonance and emotional exhaustion (Abraham, 1998; Diestel & Schmidt, 2011a, 2011b; Lewig & Dollard, 2003; Zapf, Vogt, Seifert, Mertini, & Isic, 1999) on the one hand and depersonalization (Diestel & Schmidt, 2011a, 2011b; Dormann & Zapf, 2004; Zapf et al., 1999) on the other hand. A recent meta-analysis (Hülsheger & Schewe, 2011) corroborated the potential health-impairing effects of emotion-rule dissonance reporting average corrected correlations as high as .40 for emotional exhaustion and .44 for depersonalization. The importance of these findings notwithstanding, they leave open the question of whether emotion-rule dissonance precedes employee burnout or vice versa because longitudinal studies examining the direction of the effects are still largely missing. Yet, according to Zapf et al. (1996), examining reversed effects of ill-being on job demands in longitudinal studies is important in order to rule out differing explanations for the stressor-outcome association. Moreover, testing the hypothesized as well as reversed directions of effects is an important prerequisite for drawing causal inferences (Finkel, 1995).

Emotion-rule dissonance as an antecedent of burnout

One reasoning for the effect of emotion-rule dissonance on employee burnout is grounded in action theory (Hacker, 2009; Zapf, 2002) and conservation of resources (COR) theory (Hobfoll, 2001). According to action theory, human service work requires the regulation of an emotion-integrated work action (Hacker, 2009). In particular, employees receive work assignments from the organization which they redefine into a subjective task by setting goals and planning the way of performing the task. In the terminology of action

theory, display rules are organizational guidelines which need to be redefined by the employee and serve as goals for emotion regulation. When the service provider automatically displays the organizationally stipulated emotions, the regulation of emotions according to the organizational display rules may be done nearly unconsciously. Only in situations where the required emotions are not spontaneously displayed an "emotion regulation problem" (Zapf et al., 1999) occurs – an external demand, which needs to be met in order to attain the work goals. Service providers may use predefined or learned procedures to handle such service interactions (rule-based regulation) or they may use conscious effort to initiate and maintain the organizationally mandated emotions (knowledge-based regulation). For example, an eldercare worker who is accused by family members of not spending enough time with a resident may feel anger, knowing that s/he has to allocate attention to all residents. Yet, to foster understanding, s/he may avoid displaying this anger. Instead s/he may try to be sympathetic and sustain an outward countenance by weighing her/his words and adjusting her/his facial expression. Such acts of strategically evaluating and modifying one's emotions, thoughts, and behaviours require cognitive effort (Zapf, 2002). For example, Richards and Gross (2000) showed that suppressing emotions demands continual self-monitoring and self-corrective behaviour which in turn reduces cognitive resources. This resource reduction is likely to be stressful. According to COR theory (Hobfoll, 2001), stress occurs if resources are threatened or lost or if individuals fail to gain resources after a significant resource investment. The resource loss associated with the cognitive effort of emotion regulation is therefore likely to lead to strain, impaired well-being (Gross & John, 2003), and especially to burnout (Holman et al., 2008).

A second reasoning for the negative effect of emotion-rule dissonance on burnout is grounded in role theory. This approach suggests conceiving of emotion-rule dissonance as a form of role conflict. Originating from a clash between personal values (genuinely felt emotions) and professional role demands (prescribed emotions), emotion-rule dissonance constitutes a form of person-role conflict (Abraham, 1998). Such a conflict positions employees in a situation where they can either adhere to their personal values, violating the organizationally mandated emotional display rules and running the risk of frustrating their professional self-concept, or ignore their inner emotions and conform to display rules, thereby threatening their sense of authenticity (Abraham, 1998). According to the person-centred conception of authenticity (see e.g. Wood, Linley, Maltby, Baliousis, & Joseph, 2008), conforming to external expectation contributes to both self-alienation (i.e. a mismatch between conscious and actual experiences) and compromised feelings of authentic living (i.e. a mismatch between conscious experiences and actual behaviour). Such threats to authenticity are assumed to impair well-being because authenticity is regarded as essential for healthy functioning. Accordingly, empirical research on authenticity provides evidence that accepting external influences and acting against one's inner emotions or cognitions is associated with anxiety, stress and reduced subjective and psychological well-being (Wood et al., 2008). The virtual impossibility for employees experiencing emotion-rule dissonance to reconcile the inner feelings with the organizationally mandated emotional display rules is therefore likely to lead to inner tensions and emotional distress, cumulating in the long run in employee burnout. Following COR theory and role theory, we hypothesized:

Hypothesis 1a. Time 1 emotion-rule dissonance will be positively related to Time 2 emotional exhauztion, after controlling for Time 1 emotional exhauztion.

Hypothesis 1b. Time 1 emotion-rule dissonance will be positively related to Time 2 depersonalization, after controlling for Time 1 depersonalization.

Although we expected emotion-rule dissonance to precede burnout, according to Zapf et al. (1996) it is important to assess alternative theoretical explanations for stressor–strain relations. In the following, we therefore consider reversed causation as an explanation for the association between emotion-rule dissonance and burnout.

Emotion-rule dissonance as an outcome of burnout

Instead of being a precedent of burnout, emotion-rule dissonance might follow from it. Burnt out employees might perceive interactions with clients more negatively and might therefore be more prone to experience dissonance-provoking situations than their colleagues without burnout. Psychological strain in general and burnout in particular are negative experiences and likely accompanied by negative affect (Smith, Tooley, Christopher, & Kay, 2010; Thorensen, Kaplan, Barsky, Warren, & Chermont, 2003). As a consequence, employees showing increased burnout might tend to experience negative states of affect and to perceive demands to suppress negative emotions. This assumption is supported by research showing that individuals high in negative affectivity perceive more demands to suppress negative emotions than individuals low in negative affectivity (Schaubroeck & Jones, 2000) and that negative affect influences an individual's perception of display rules (Kammeyer-Mueller et al., 2013). Thus, it can be assumed that employees high in burnout experience negative feelings, which are in conflict to organizational display rules, more frequently. As a result they are more often confronted with emotion-rule dissonance.

Hypothesis 2a. Emotional exhaustion at Time 1 will be positively related to Time 2 emotion-rule dissonance, after controlling for Time 1 emotion-rule dissonance.
Hypothesis 2b. Depersonalization at Time 1 will be positively related to Time 2 emotion-rule dissonance, after controlling for Time 1 emotion-rule dissonance.

The presented lines of reasoning suggest that the association between emotion-rule dissonance and burnout can either result from emotion-rule dissonance having an impact on burnout or, vice versa, from burnout having an influence on the exposure to emotion-rule dissonance. Although testing both assumptions is important to rule out alternative explanations for stressor–strain relations (Zapf et al., 1996), we argue in favour of a unidirectional effect of emotion-rule dissonance on employee burnout. Support for such an effect is provided by theoretical models, such as the stressor approach (Zapf, 2002), as well as by recent research results (see Diestel & Schmidt, 2011b for preliminary support of this assumption). Assuming that emotion-rule dissonance precedes emotional exhaustion and depersonalization rather than following from them, we were further interested in potential moderators that buffer against the detrimental effects of emotion-rule dissonance.

Job complexity as a moderator of the link between emotion-rule dissonance and burnout

Given the prevalence of emotion-rule dissonance in human service interactions in general and in care interactions in particular, the question arises as to whether moderators exist that reduce the relation between emotion-rule dissonance and burnout. In particular,

we were interested in whether job characteristics can buffer against the negative effects of emotion-rule dissonance. Due to the fact that eldercare work not only entails dealing with situations that provoke emotion-rule dissonance but also is a rather complex job, we examined job complexity as a potential moderator of the dissonance–burnout relation.

Job complexity refers to the extent to which tasks are mentally challenging, requiring workers to use a number of complex skills (e.g. Morgeson & Humphrey, 2006). Complex jobs involve considering different goals and plans (e.g. Frese, 1987) as well as solving unforeseen problems and dealing with unpredictable events (Kohn & Schooler, 1983). Aspects that contribute to job complexity in eldercare are, for example, the requirement to balance different expectations (of family members, care recipients, professional standards, and supervisors) or goals (e.g. cost efficiency, detailed documentation, providing activating/stimulating care).

Job complexity is generally considered a positive aspect of work and is positively related to well-being and job-related attitudes (see Ilgen & Hollenbeck, 1991, for a review). For example, job complexity was shown to be positively associated with mental health (Caplan, Cobb, French, van Harrison, & Pinneau, 1975), an active life orientation (Kohn & Schooler, 1983), work motivation (Hackman & Oldham, 1976), as well as job satisfaction (Morgeson & Humphrey, 2006) and performance (Fried & Ferris, 1987). Moreover, complex jobs were shown to foster employees' capacity to master job demands (Brutus, Ruderman, Ohlott, & McCauley, 2000; McCauley, Ruderman, Ohlott, & Morrow, 1994). Thus, job complexity constitutes an important situational resource for employees (Frese, 1987) which should buffer against the negative effects of emotion-rule dissonance on employee burnout.

One mechanism underlying the protective effect of job complexity may be related to its capacity to strengthen employees' personal resources and to thereby counteract the resource loss associated with the cognitive effort arising from emotion-rule dissonance. According to the extended job demands–resources model (Bakker & Demerouti, 2014), job resources stimulate personal growth and foster the development of personal resources. As suggested by Bandura (1997), the exposure to challenging work environments (such as complex jobs) promotes learning. And these work-related learning experiences will, according to the learning–generalization model of Kohn and Schooler (1983) and the job characteristics theory (Kulik, Oldham, & Hackman, 1987), generalize to other situations. Thus, it is argued that individuals, through learning experiences, build personal resources over time. Job complexity, in particular, seems to have beneficial effects on employees' intellectual and cognitive abilities. Studies in a variety of contexts have shown that complex tasks improve employees' creativity (for a meta-analysis, see Hammond, Neff, Farr, Schwall, & Zhao, 2011), intellectual functioning (Kramer, Bherer, Colcombe, Dong, & Greenough, 2004), and intellectual flexibility (Caplan & Schooler, 2006; Kohn & Schooler, 1983; Schooler, Mulatu, & Oates, 2004). In following COR theory, the gain of personal resources through performing complex jobs should counteract the resource loss associated with the cognitive effort required to align the displayed with the organizationally mandated emotions.

On the other hand, the personal resources (i.e. cognitive abilities) built by working on complex jobs may help employees to better tolerate the inner tension induced by emotion-rule dissonance. In line with this reasoning, cognitive abilities were shown to reduce the negative effects of emotional arousal on mental health (Masten et al., 1999). Moreover,

cognitive flexibility was found to attenuate the relation between emotional arousal associated with life stress and emotional problems (Flouri, Hickey, Mavroveli, & Hurry, 2011). The mechanism underlying the protective effect of cognitive flexibility is argued to reside in the strengthening of control over emotions (Flouri et al., 2011). Assuming that employees who perform cognitively complex work built personal resources, as suggested by the job demands–resources model (Bakker & Demerouti, 2014), the learning–generalization model (Kohn & Schooler, 1983), and the job characteristics theory (Kulik et al., 1987), we expect that these employees are less negatively affected by the inner tension associated with emotion-rule dissonance than employees performing less complex jobs because the cognitive flexibility acquired by performing complex work strengthens the employees' abilities to control their emotions and reduces the negative effects of emotional arousal on mental health.

To summarize, we propose that job complexity counteracts the health-impairing effects of emotion-rule dissonance because it fosters personal development and skill acquisition on the job. Using the acquired abilities, employees working on complex jobs might be less negatively affected by the cognitive effort and the inner tensions associated with emotion-rule dissonance.

> *Hypothesis 3a.* Job complexity will moderate the relation between Time 1 emotional dissonance and Time 2 emotional exhaustion. The effect will be stronger for employees conducting noncomplex tasks than for those conducting complex tasks.
> *Hypothesis 3b.* Job complexity will moderate the relation between Time 1 emotional dissonance and Time 2 depersonalization. The effect will be stronger for employees conducting noncomplex tasks than for those conducting complex tasks.

Method

Procedure and sample

A 2-wave panel study with a time lag of 16 months was conducted to test the study hypotheses. This time lag was chosen, on the one hand, as a result of weighing the relatively high stability of burnout over time (e.g. .60 for emotional exhaustion; Schaufeli, Maassen, Bakker, & Sixma, 2011) and the relatively high turnover rates among nursing staff (e.g. 54.4%; Hasselhorn, Müller, Tackenberg, University of Wuppertal, & NEXT-Study Coordination, 2005). On the other hand, the effects of emotion-rule dissonance on burnout may take some time to evolve. According to models on the burnout process, employees initially try to meet job demands by increasing efforts for goal attainment, only thereafter vital exhaustion and apathy occurs (Burisch, 2006). Thus, emotion-rule dissonance may not immediately result in burnout. Yet, to our knowledge no works exist on the temporal relations between emotion-rule dissonance and burnout. Therefore, we relied on previous studies on lagged effects of social stressors on impaired health (Dormann & Zapf, 1999, 2002) to decide upon the optimal time lag for our study. This research showed that time intervals between eight month and two years are necessary to identify effects of job characteristics on strain. Thus, a time lag of 16 months seemed sufficiently long enough to detect effects of emotion-rule dissonance on burnout and to ensure adequate participation rates in both surveys despite high turnover in eldercare.

Participants were eldercare workers, recruited from 38 nursing homes or outpatient care organizations. In both waves of data collection, we distributed paper-and-pencil questionnaires to all eldercare workers currently working in the organizations leaving aside employees on (sick or parental) leave or on holidays. Completed questionnaires should be returned to the researchers or should be posted in a special box placed at the ward or at the organizational headquarters. In Wave 1, data were gathered between November 2008 and March 2009. During this period, 3155 questionnaires were distributed and 1697 were returned, resulting in a response rate of 54%. In February 2010, the organizations were contacted again and invited to participate in the second round of data collection lasting from March to July, 2010. During this period, 1476 of the 3145 distributed questionnaires were returned (response rate: 46%). The two data sets were linked using a personal code that participants were asked to provide on each survey. To avoid recall bias a detailed instruction how to generate the personal code was given on both surveys. In total, 591 responses could be matched. Because we approached the eldercare workers via eldercare organizations, we had no contact information to follow up on study participants who had left their employer between the two waves of data collection. Moreover, although we encouraged people to take part in both surveys, participation was voluntary. Therefore, the longitudinal sample included only 35% of the Wave 1 respondents.

Of the eldercare workers for whom data were matched, 68% were employed in nursing homes and 32% in outpatient care organizations. The sample included 27% nurses, 46% orderlies, and 20% nursing aides. Five per cent of the participants indicated belonging to other professional groups without specifying these, and 2% did not indicate professional group membership. Most respondents were female (89%), reflecting the predominance of women in eldercare and mirroring previous study results (Nolan, Grant, Brown, & Nolan, 1998). At Wave 1, 11% of the participants were younger than 31 years of age, 27% were between 31 and 40 years, 45% were between 41 and 50 years, and 17% were 51 years or older. Average years of experience in eldercare at Time 1 were relatively high at 10.84 years ($SD = 8.27$).

Given the panel dropout, chi-square tests and unpaired t-tests were conducted to compare the final longitudinal sample with the 1106 participants who had provided data only at Time 1. No differences were found with regard to gender, $\chi^2(df = 1) = 0.13$, *ns*. However, younger employees (i.e. those below age 31; $\chi^2(df = 5) = 11.94$, $p < .05$) were underrepresented in the longitudinal sample as compared to the T1-only-sample. This corresponds with the finding that participants of both surveys had more experience in the nursing profession than T1-only-participants, $Ms = 10.83$ and 9.92, $t(df = 1616) = 2.13$, $p < .05$.

Measures

Emotion-rule dissonance. Eldercare workers indicated their level of emotion-rule dissonance by answering the respective five-item subscale of the Frankfurt Emotion Work Scales (FEWS 4.1; Zapf et al., 1999). For each item, respondents indicated how frequently they need to suppress or induce feelings in order to comply with professional or organizational standards on a 5-point rating scale ranging from 1 (*very seldom/never*) to 5 (*very often*). A sample item reads as follows: "How often does it occur in your job that one has to display emotions that do not correspond to what is felt in this situation?" A factor analysis

showed one factor. One item, which asked employees to compare their job with employees experiencing frequent versus infrequent emotion regulation requirements, was excluded because of a weak factor loading.

Job complexity. Job complexity was measured using a 4-item subscale of Büssing and Glaser's (2002) self-report instrument for work analysis in eldercare (German acronym: TAA). The items assess the degree to which eldercare workers are required to generate unique ideas, make task-related decisions, or solve non-routine problems. For example, respondents had to assess the following statement on a 5-point rating scale ranging from 1 (*not at all*) to 5 (*to a very great extent*): "Time and again, this job requires being responsive to unexpected developments."

Burnout. Burnout was assessed using the two core dimensions (Schaufeli & Taris, 2005) of the German version of the Maslach Burnout Inventory (MBI; Büssing & Perrar, 1992), namely emotional exhaustion and depersonalization. Emotional exhaustion was measured using 9 items, including "I feel emotionally drained from work." Depersonalization comprised 5 items, including "I feel I treat some of my patients as if they were impersonal objects." Items were scored on a 6-point rating scale ranging from 1 (*never*) to 6 (*very often*).

Missing data

In the data set, there were a few answers missing (0.2–3.2% per variable). Given the potential negative effects of not including all available data in the analysis, we used imputation techniques to estimate the missing data. As suggested by Acock (2005), respondents with more than 30% missing values ($N = 8$) were excluded from the data set. For the remaining 89 cases with a maximum of 30% missing data, missing values on the study variables but not on the demographic variables were imputed using NORM 2.02 (Schafer, 2009). Information for imputing missing values was drawn from all study and demographic variables. To ensure that the imputations were statistically independent, data augmentation was carried out for 2000 cycles. Every 200th cycle the results of the imputation were stored, resulting in 10 simulated data sets. Imputed values were rounded to the nearest observed value in order to reflect the response format of the items. Statistical analyses were carried out for each of the 10 data sets separately using AMOS 21.0. Then, we combined the results into a single set of estimates using Rubin's rules (Lüdtke, Robitzsch, Trautwein, & Köller, 2007). After imputation, 583 cases were available for data analysis.

Results

Descriptive statistics

Means, standard deviations, and correlations between the study variables are presented in Table 1. Table 1 also provides information on internal consistencies as indicated by Cronbach's α. Mean levels of emotion-rule dissonance amounted 2.68 at Time 1, $SD = 0.93$, and 2.74 at Time 2, $SD = 0.96$, mirroring previous study results among a sample of health care workers (Diestel & Schmidt, 2011a). Job complexity was rated somewhat higher, $Ms = 3.55$ (Time 1) and 3.47 (Time 2), and rather consistently, $SDs = 0.61$ (Time 1) and 0.71 (Time 2). These moderate levels of variance in job complexity correspond to values obtained from other homogeneous samples of nursing staff (Büssing & Glaser, 2002). Correlations

Table 1. Descriptive statistics, correlations, and reliabilities for the study variables.

	M	SD	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Age	3.67	0.91	.06	.05	−.25**	.35**	.04	.00	−.04	.02	−.02	.02	.00	−.07	−.06
2. Gender: female	0.89	0.31		−.04	−.10*	.02	−.23**	−.02	−.01	.04	.08*	.02	.01	−.05	−.06
3. Occ. group: orderly	0.47	0.50			−.59**	−.10*	.02	−.08	−.07	−.10*	−.05	−.01	−.05	−.03	−.03
4. Occ. group: nurse	0.28	0.45				.25**	.05	.03	.06	−.08	−.09*	.00	.07	.03	.06
5. Job tenure (in years)	10.84	8.23					.13**	.03	.03	−.07	−.09*	.12**	.13**	.03	.04
6. Weekly working hours	2.82	1.12						.06	.04	−.02	−.08	.08	.08	.14**	.12**
7. Emotion-rule dissonance T1	2.68	0.93						(.85)	.54**	.08	.12**	.42**	.30**	.35**	.34**
8. Emotion-rule dissonance T2	2.74	0.96							(.87)	.09*	.13**	.29**	.42**	.27**	.43**
9. Job complexity T1	3.55	0.61								(.50)	.52**	.00	.00	.01	−.01
10. Job complexity T2	3.47	0.71									(.70)	.00	.02	.00	−.02
11. Emotional exhaustion T1	2.86	0.97										(.89)	.58**	.52**	.36**
12. Emotional exhaustion T2	2.94	1.02											(.91)	.31**	.57**
13. Depersonalization T1	2.13	0.92												(.77)	.51**
14. Depersonalization T2	2.13	0.90													(.79)

Notes: Cronbach's a shown in parentheses. Estimates are based on combined results from 10 analyses; $N = 559$. Age categories: 1 = younger than 21 years of age, 2 = 21–30 years, 3 = 31–40 years, 4 = 41–50 years, 5 = 51–60 years, 6 = 61years or older; Categories of weekly working hours: 1 = 20 hours or less, 2 = 21–30 hours, 3 = 31–35 hours, 4 = 36 hours or more.
*$p < .05$; **$p < .01$.

between study constructs were medium in size and in the expected direction. Emotion-rule dissonance was positively related to emotional exhaustion and depersonalization. Job complexity was, by contrast, not related to the burnout dimensions. As apparent from Table 1, emotional exhaustion and depersonalization correlated with some demographic variables. Employees with longer job tenure reported higher levels of emotional exhaustion and those with longer weekly work hours reported higher levels of depersonalization. These variables were included in subsequent analyses as controls.

Preparatory analyses

In a first step, we examined whether the eldercare workers' organizational background had affected their responses. We therefore calculated the intraclass correlation for emotional exhaustion and depersonalization using MPlus. For emotional exhaustion only 1% of the variance was attributable to the organizational level (ICC = 0.009). Likewise, the amount of variance to be explained at the organizational level was rather low for depersonalization (ICC = 0.053). We therefore assumed that our data were independent and the employees' organizational affiliation was not controlled for in subsequent analyses.

In a second step, the instruments' construct validity was evaluated using confirmatory factor analyses as implemented in AMOS 21.0. To examine whether the dissonance, complexity, and burnout items represent distinct constructs, we specified four alternative models: (1) a 1-factor model with all items from Time 1 and Time 2 loading on one factor; (2) a 2-factor model with items loading on their respective time factors; (3) a 4-factor model with items loading on their respective emotion-rule dissonance, job complexity, and burnout factors; and (4) an 8-factor model with items loading on their respective dimensions and time points. For all models, measurement errors between corresponding items at Time 1 and Time 2 were correlated to account for non-independence between repeated measures (Reinecke, 2005). The 8-factor model ($\chi^2 = 2000.63$, $df = 852$) fitted the data better than the 1-factor model ($\Delta\chi^2(df = 28) = 4277.66$, $p \leq .001$), the 2-factor model ($\Delta\chi^2(df = 27) = 2583.97$, $p < .001$), and the 4-factor model ($\Delta\chi^2(df = 22) = 2342.19$, $p < .001$). In addition to its more adequate fit compared to the alternative models, the 8-factor model yielded acceptable overall fit indices, $\chi^2/df = 2.35$, comparative fit index (CFI) = .91, root mean square of approximation (RMSEA) = .048, p-close = .867. Only the CFI deviated slightly from its recommended range of acceptability (i.e. CFI > .95; Hu & Bentler, 1999). An inspection of modification indices showed that adding an error correlation would increase model fit. Allowing for this correlation seemed justified because the respective items belong to the same subdimension of burnout (i.e. the emotional exhaustion subscale). The modification led to a significant improvement in model fit, $\Delta\chi^2(df = 2) = 197.33$, $p < .001$, and a good overall fit $\chi^2/df = 2.12$, CFI = .92, RMSEA = .040, p-close = 1.00.

In a third step, this final model was tested for metric invariance across measurement points by constraining the factor loadings of corresponding items to be equal across time points. These equality constraints did not lead to a significant change in chi-square, $\Delta\chi^2(df = 18) = 19.87$, ns, supporting the assumption that the corresponding T1 and T2 items conveyed the same meaning in both surveys. All items loaded significantly on their respective latent dimensions. Therefore, it could be concluded that even if the internal consistency of job complexity at Time 1 is low, its construct validity seems appropriate as the 8-factor model yielded satisfactory fit indices.

Does emotion-rule dissonance precede employee burnout?

To test *Hypotheses 1a* and *1b*, which predicted that Time 1 emotion-rule dissonance would be positively related to Time 2 emotional exhaustion and Time 2 depersonalization, respectively, we specified competing latent structural models (Zapf et al., 1996). First, we specified a stability model (M1). This model included autoregression paths for corresponding Time 1 and Time 2 constructs and synchronous correlations between Time 1 constructs. We then added lagged effects of Time 1 emotion-rule dissonance on Time 2 burnout to the stability model (M2, hypothesized model). In a third step, a reversed model (M3) was specified with regression paths from Time 1 burnout to Time 2 emotion-rule dissonance added to the stability model. Finally, Model 2 and Model 3 were combined to test for reciprocal effects between emotion-rule dissonance and burnout (M4).

The stability model (M1) already yielded acceptable fit, $\chi^2(df = 653) = 1424.68$, CFI = .93, RMSEA = .046, *p*-close = .987. Except for the CFI-value, the fit indices satisfied their cut-off criteria. Adding the hypothesized effects of Time 1 emotion-rule dissonance on Time 2 emotional exhaustion and Time 2 depersonalization (M2) significantly improved the model fit, $\Delta\chi^2(df = 2) = 19.49$, $p < .001$, CFI = .93, RMSEA = .045, *p*-close = .993. By contrast, Model 3, which contained reversed effects from Time 1 emotional exhaustion and depersonalization to Time 2 emotion-rule dissonance, did not fit the data better than the stability model, $\Delta\chi^2(df = 2) = 2.85$, $p = .24$, or the hypothesized model. We further found that the reciprocal model (M4) did not differ significantly from Model 2, $\Delta\chi^2(df = 2) = 2.39$, $p = .30$. Even if the χ^2-difference test was not significant, the path coefficients of Model 4 argued in favour of the hypothesized model because the paths running from Time 1 emotional exhaustion and depersonalization to Time 2 emotion-rule dissonance were not significant ($B = 0.03$, $p = .33$; $B = 0.06$, $p = .18$) and therefore unessential. By contrast, the paths running from Time 1 emotion-rule dissonance to Time 2 emotional exhaustion ($B = 0.07$, $p < .05$) and Time 2 depersonalization ($B = 0.18$, $p < .001$) were significant (see Table 2). Thus, *Hypothesis 1a* and *Hypothesis 1b*, stating that Time 1 emotion-rule dissonance would be positively related to Time 2 burnout, were supported. Employees who reported regulating their emotions more frequently at Time 1 experienced higher levels of emotional exhaustion and depersonalization at Time 2 even if Time 1 levels of the burnout dimensions were controlled for. *Hypothesis 2a* and *Hypothesis 2b*, assuming reversed causation, were not supported.

Table 2. Unstandardized path coefficients and standard errors of the stability, the hypothesized, the reversed, and the reciprocal model.

Paths	Stability model		Hypothesized model		Reversed model		Reciprocal model	
	B	*SE (B)*	*B*	*SE (B)*	*B*	*SE (B)*	*B*	*SE (B)*
Emotional exhaustion (EE) Time 1 → EE Time 2	0.63**	0.04	0.60**	0.04	0.63**	0.04	0.60**	0.04
Depersonalization (DEP) Time 1 →DEP Time 2	0.60**	0.04	0.51**	0.05	0.60**	0.04	0.51**	0.05
Emotion-rule dissonance (ED) Time 1 → ED Time 2	0.63**	0.04	0.60**	0.06	0.58**	0.05	0.60**	0.05
ED Time 1 → EE Time 2			0.07*	0.04			0.07*	0.04
ED Time 1 →DEP Time 2			0.18**	0.04			0.18**	0.04
EE Time 1 →ED Time 2					0.04	0.08	0.03	0.08
DEP Time 1 →ED Time 2					0.07	0.07	0.06	0.07

Notes: $N = 569$. Coefficients are based on combined results from 10 structural equation modelling analyses. Job tenure and weekly working hours were included as control variables.
*$p < .05$; **$p < .01$.

Does job complexity moderate the relation between emotion-rule dissonance and employee burnout?

We examined whether job complexity exerts a buffering effect using Marsh, Wen, and Hau's (2004) unconstrained approach to moderated structural equation modelling. In this approach, the products of observed variables are indicators of the latent interaction term without imposing nonlinear constraints on the model. In simulation studies (Marsh et al., 2004), the unconstrained approach performed relatively unbiased under conditions of normal and non-normal distributions. Although it had less statistical power in small sample sizes, because of larger estimated standard errors, it performed well in larger sample sizes ($N = 500$). To apply the unconstrained approach, we added a latent interaction term and a latent job complexity factor to the hypothesized model. The latent interaction was defined by the products of the mean-centred indicators of emotion-rule dissonance and job complexity at Time 1.

The extended model fit the data quite well, $\chi^2(df = 1525) = 2528.89$, CFI = .94, RMSEA = .03, p-close = 1.00. Except for the CFI-value, the fit indices satisfied their cut-off criteria (for parameter estimates, see Table 3). In support of *Hypothesis 3a*, job complexity interacted with emotion-rule dissonance to predict emotional exhaustion ($B = -0.13$, $p < .05$). As illustrated in Figure 1 and supported by simple slope analyses, employees who needed to regulate their emotions particularly often felt more emotionally exhausted if they reported lower levels of job complexity (i.e. one standard deviation below the mean; $B = 0.12$, $t = 2.46$, $p < .05$). For employees with high levels of job complexity (i.e. one standard deviation above the mean), emotion-rule dissonance at Time 1 had no effect on emotional exhaustion at Time 2 ($B = -0.04$, $t = 0.72$, $p = .47$). Moreover, the model estimates reveal that the main effect of Time 1 emotion-rule dissonance on Time 2 emotional exhaustion was no longer significant when the interaction was taken into account ($B = 0.04$, $p = .12$).

In support of *Hypothesis 3b*, we found that the relation between Time 1 emotion-rule dissonance and Time 2 depersonalization was also moderated by job complexity ($B = -0.19$, $p < .01$). As illustrated in Figure 2 and supported by simple slope analyses, employees who needed to regulate their emotions particularly often reported a higher tendency to depersonalize care recipients if they encountered low job complexity ($B = 0.27$, $t = 4.15$, $p < .001$). Again, for employees with high levels of job complexity, the association between emotion-rule dissonance at Time 1 and depersonalization at Time 2 was not significant ($B = 0.04$, $t = 0.63$, $p = .53$). Overall, the Time 1 predictors explained 38% of

Table 3. Unstandardized path coefficients and standard errors of moderated structural equation modelling analyses.

Variables	Emotional exhaustion Time 2		Depersonalization Time 2	
	B	$SE (B)$	B	$SE (B)$
Job tenure	0.01	0.00	0.00	0.00
Weekly working hours	0.02	0.02	0.04	0.03
Outcome Time 1	0.61**	0.04	0.50**	0.05
Emotion-rule dissonance (ED) Time 1	0.04	0.04	0.16**	0.04
Job Complexity (JC) Time 1	−0.03	0.07	−0.15	0.09
ED × JC Time 1	−0.13*	0.06	−0.19*	0.08
R^2		0.38		0.39

Notes: $N = 569$. Coefficients are based on combined results from 10 structural equation modelling analyses.
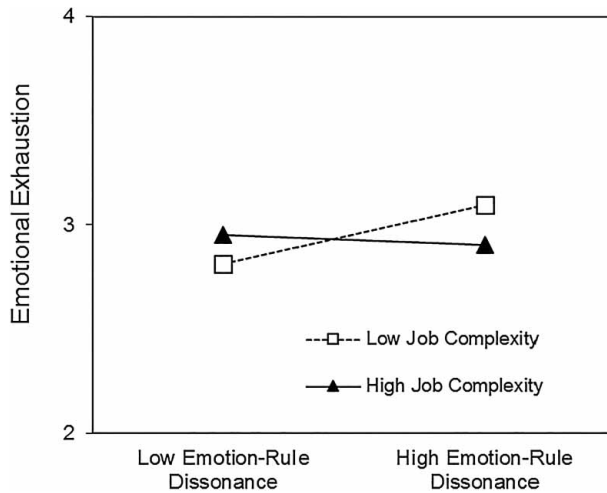*$p < .05$; **$p < .01$.

Figure 1. Lagged interaction effects of Time 1 emotion-rule dissonance and Time 1 job complexity on Time 2 emotional exhaustion.

the variance in Time 2 emotional exhaustion and 39% of the variance in Time 2 depersonalization.

Discussion

This longitudinal study was designed to examine the interactive effects of emotion-rule dissonance and job complexity on employee burnout. It contributes to the understanding of how these factors are linked to employee strain in two ways. First, we used longitudinal data to examine the relation between emotion-rule dissonance and emotional exhaustion as well as depersonalization. Second, we examined job complexity as a buffer in the
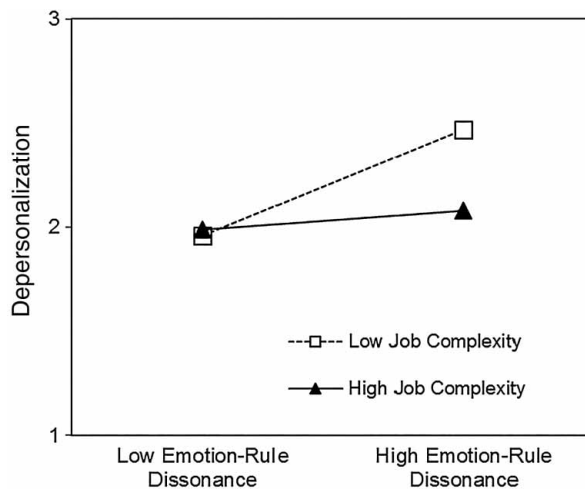

Figure 2. Lagged interaction effects of Time 1 emotion-rule dissonance and Time 1 job complexity on Time 2 depersonalization.

dissonance–burnout relation. We proposed that complex tasks would reduce the demands associated with the discrepancy between felt and organizationally stipulated emotions, because they strengthen employees' capacities to deal with emotion-rule dissonance.

In concordance with our assumptions, the study results showed that emotion-rule dissonance contributes to employee strain by increasing the tendency to experience emotional exhaustion and to depersonalize care recipients. Structural equation modelling analyses revealed that emotion-rule dissonance is an antecedent rather than a consequence of emotional exhaustion and depersonalization. Thus, being emotionally exhausted and perceiving care recipients as impersonal objects does not heighten employees' perception of emotion-rule dissonance; rather, experiencing discrepancies between felt and organizationally mandated emotions increases employee burnout in the long run. Beyond that, job complexity qualified the relation between emotion-rule dissonance and burnout. For eldercare workers who reported restricted job complexity (but not for their colleagues with high levels of job complexity) we found an association between emotion-rule dissonance and the two burnout dimensions.

Implications

From a *theoretical perspective*, our findings contribute to the understanding of the health-impairing effects of emotional labour in general and of emotion-rule dissonance in particular. By explicitly testing hypothesized, reversed, and reciprocal effects, we shed light on the dissonance–burnout relation. Our results showed that the association stems only from effects of emotion-rule dissonance on burnout but not from reversed effects of burnout on emotion-rule dissonance. Thus, in concordance with our assumptions and theoretical models of the emotional labour process (Holman et al., 2008; Zapf, 2002), we were able to demonstrate that employee burnout does not precede, but rather follows from emotion-rule dissonance. This finding argues in favour of the stressor approach (Zapf, 2002), which conceptualizes emotion-rule dissonance as an external job demand. The fact that preceding levels of burnout, although often accompanied with negative affect (Thorensen et al., 2003), do not influence employees' perception of emotion-rule dissonance, suggests that the assessment of emotion-rule dissonance indeed depends on the characteristics of the job and not on employees' strain. Burnt out employees are not more prone to experience dissonance-provoking situations than their less burnt out co-workers.

The longitudinal effects found in this study were somewhat weaker than those reported in cross-sectional research (Hülsheger & Schewe, 2011). Yet, the found effect sizes are common in longitudinal research, owing to the fact that the explanatory variables are related to changes in the outcome variables from Time 1 to Time 2 (because of controlling for Time 1 measures of the outcome variables). Given the strong stability effects found in this and other longitudinal studies, there is little change in the outcomes to be accounted for which results in small effect sizes for the explanatory variables (Taris & Kompier, 2003). Moreover, small effect sizes are to be expected in research on stressor–strain relations because according to Semmer, Zapf, and Greif (1996), there is an upper limit of 15–20% variance in strain that can be explained by job stressors. The small magnitude of the effects found in this study notwithstanding, the results support the assumption that

being confronted with discrepancies between felt and organizationally mandated emotions precedes job burnout.

The finding that emotion-rule dissonance precedes burnout is in line with findings by Diestel and Schmidt (2011b) as well as by Hülsheger, Lang, and Maier (2010). Yet, it contradicts Philipp and Schüpbach's (2010) finding that exhausted teachers are more likely to use surface acting than their less exhausted colleagues. These contradictory results stress the importance of differentiating between emotion-rule dissonance as a job stressor and surface acting as an emotion regulation strategy (Hülsheger & Schewe, 2011) and thus between the stressor approach and the emotion regulation approach. Whereas the first approach focuses on emotion-rule dissonance, the second approach focuses on the strategies used to deal with discrepancies between required and felt emotions. Taking together our findings and those reported by Philipp and Schüpbach (2010), we conclude that emotionally exhausted employees have more difficulties in applying deep acting in order to regulate their emotions, but that the level of experienced job burnout does not influence their perceptions of emotion-rule dissonance as a job stressor. Thus, exhausted employees do not experience more dissonance-provoking situations than their less exhausted counterparts but they do rely on surface acting as a strategy of dealing with emotion-rule dissonance more frequently.

With regard to the interactive effect of emotion-rule dissonance and complexity on job burnout, the study results support the crucial role of job complexity in today's work environments. As proposed, job complexity reduced the adverse effects of emotion-rule dissonance on employee strain. Thus, the present study provides support for Hacker's (2009) proposition that cognition and emotion are closely intertwined in the regulation of work action in the service industries. Furthermore, the interaction effect is in line with the learning–generalization model (Kohn & Schooler, 1983) and the job characteristics theory (Kulik et al., 1987), suggesting that individuals tend to generalize their learning experiences to other situations. Thus, skills and abilities acquired by performing mentally complex jobs seem to be generalized to emotionally demanding situations and help employees in dealing with emotion-rule dissonance. Although the research presented here suggests that job complexity operates as a buffer against the negative effects of emotion-rule dissonance on burnout, it cannot speak directly about the underlying psychological processes. Yet, the assumed mechanism that job complexity fosters intellectual flexibility and creativity which in turn helps employees to master emotion-rule dissonance is well grounded in theory and data. The extended job demands–resources model (Bakker & Demerouti, 2014) proposes that job resources lead to personal resources which in turn help employees master job demands. Empirical evidence stresses the positive effects of job complexity on intellectual functioning (e.g. Kramer et al., 2004; Schooler et al., 2004) and on the completion of job demands (Brutus et al., 2000; McCauley et al., 1994). In the present study, we were able to expand this research by showing that job complexity interacts with emotion-rule dissonance in the prediction of burnout.

Furthermore, our results on the interactive effect of job complexity and emotion-rule dissonance encourage speculations about temporality. The results suggest that the cognitive resources required for emotion regulation and built by job complexity operate on various time frames. Emotion regulation depletes mental resources at the very moment of regulation and only in the long run it results in employee burnout. Being confronted with a complex work situation might momentarily also require cognitive effort, but in

the long run it builds personal resources that help employees manage emotion-rule dissonance (e.g. Brutus et al., 2000). To ground these speculations in data, an important step would be to compare the long-term and short-term effects of job complexity on cognitive resources.

The considerations on the temporality of effects also draw attention to the question of time lags in longitudinal research. The decision for the time lag of the present study was guided by previous findings showing that the strongest effects of stressors on strain emerged with intervals between eight months (Dormann & Zapf, 1999) and two years (Dormann & Zapf, 2002). Given the strong stability effects of emotional exhaustion and depersonalization found in the present study, the chosen 16-month interval proved just sufficiently long enough to detect the long-term main and buffering effects of emotion-rule dissonance and job complexity, respectively. Thus, we conclude that intervals of 16 months or longer are adequate to study the long-term effects of emotion-rule dissonance.

From a *practical perspective*, our findings stress the importance of designing complex tasks to help human service workers cope with the unique emotional stressors of their jobs. Given the fact that emotion-rule dissonance has detrimental effects on employee strain and that complex tasks buffer these adverse effects, it seems advisable for organizations to enhance job complexity. This may be accomplished, for example, by implementing primary nursing instead of functional nursing. Primary nursing is a system of care delivery where an eldercare worker is responsible for several residents instead of being assigned to specific tasks. This form of care organization offers the opportunity to increase job complexity because it broadens the tasks assigned to eldercare workers and increases decision-making authority. Although such a system of care delivery may counteract current trends in health and eldercare toward the decomposition of complex tasks into fragmented and taylorised bits and pieces (Hertting, Nilsson, Theorell, & Sätterlund Larsson, 2003), the buffering effect of job complexity argues in favour of offering jobs that involve complex tasks.

Limitations and future research

When assessing the study results, the following limitations need to be considered. First, the theoretical argument that complex tasks buffer the negative effects of emotion-rule dissonance on job burnout because they foster employees' intellectual flexibility requires further assessment. In particular, the assumed psychological mechanism that triggers the positive effect of complexity demands a more thorough investigation. Unfortunately, the present study does not provide us with adequate measures of intellectual flexibility to meet this requirement. Yet, studies on the relation between job complexity on the one hand and intellectual flexibility (e.g. Kohn & Schooler, 1983) and creativity (for a meta-analysis, see Hammond et al., 2011) on the other hand may serve as preliminary support for our assumption. In these studies, job complexity was found to be moderately related to intellectual flexibility, idea generation, and innovation. Based on these findings, one may conclude that job complexity enhances employees' intellectual functioning which in turn helps employees to deal with emotion-rule dissonance.

Second, although we used a complete two-wave panel design, our data do not allow us to draw inferences regarding causality. For causal inferences, it is necessary to replicate this evidence in an experimental setting. This would involve the experimental manipulation of

emotion-rule dissonance and the control of other confounding variables in the laboratory. Despite this limitation, our findings provide at least insights into the sequential order of the dissonance–burnout relation – an important prerequisite for causality (Finkel, 1995).

Third, the internal consistency of the Time 1 job complexity measure was somewhat low. Yet, additional analyses to ensure sufficient validity argued in favour of using this measure. Confirmatory factor analysis revealed adequate model fit and significant factor loadings for all job complexity items. In addition to this, one has to keep in mind that low internal consistencies result in inflated standard errors and correspondingly small t-statistics making it more difficult for researchers to detect significant effects. Thus, the low reliability may only have led to an underestimation of potential effects of job complexity.

Finally, our findings rely on a specific sample of service workers, namely on eldercare workers. Future research should therefore contribute to the generalizability of the protective effect of job complexity by replicating it in other work contexts. Moreover, our longitudinal sample was somewhat older than the T1-only sample, suggesting that panel dropout was higher among younger eldercare workers. This selective dropout might be explained by the fact that younger eldercare workers change their employers more frequently (Hasselhorn et al., 2005), contributing to a higher dropout rate in our longitudinal study. However, participants' age should neither have an influence on the relation between emotion-rule dissonance and burnout nor on the moderating effect of job complexity.

Conclusions

The discrepancy between felt and organizationally stipulated emotions has been labelled emotion-rule dissonance (Holman et al., 2008) and has been conceptualized as a stressor in human service work (Zapf, 2002). In the current study, we investigated the relation between emotion-rule dissonance and employee burnout as well as the moderating role of job complexity using longitudinal data gathered from eldercare workers. We were able to demonstrate that emotion-rule dissonance precedes emotional exhaustion and depersonalization rather than following from them. Beyond that, we found that the adverse effects of emotion-rule dissonance are influenced by the extent to which employees fulfil complex tasks. Employees whose jobs offer substantive complex tasks experience lower levels of emotional exhaustion and depersonalization when confronted with emotion-rule dissonance at work than those employees who are offered restricted job complexity.

Funding

References

Abraham, R. (1998). Emotional dissonance in organizations: Antecedents, consequences, and moderators. *Genetic, Social, and General Psychology Monographs*, *124*, 229–246.

Acock, A. C. (2005). Working with missing values. *Journal of Marriage and Family*, *67*, 1012–1028.

Bakker, A. B., & Demerouti, E. (2014). Job demands-resources theory. In P. Y. Chen & C. L. Cooper (Eds.), *Wellbeing: A complete reference guide* (Vol. III, pp. 37–64). Chichester: Wiley-Blackwell.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.

Bono, J. E., & Vey, M. A. (2005). Toward understanding emotional management at work: A quantitative review of emotional labor research. In C. E. J. Härtel, W. J. Zerbe, & N. M. Ashkanasy (Eds.), *Emotions in organizational behavior* (pp. 213–233). Mahwah, NJ: Lawrence Erlbaum Associates.

Bresó, E., Salanova, M., & Schaufeli, W. B. (2007). In search of the "third dimension" of burnout: Efficacy or inefficacy? *Applied Psychology: An International Review*, *56*, 460–478.

Brutus, S., Ruderman, M. N., Ohlott, P. J., & McCauley, C. D. (2000). Developing from job experiences: The role of organization-based self-esteem. *Human Resource Development Quarterly*, *11*, 367–380.

Burisch, M. (2006). *Das Burnout-Syndrom: Theorie der inneren Erschöpfung* [The burnout-syndrome: A theory of inner exhaustion]. Heidelberg: Springer Medizin Verlag.

Büssing, A., & Glaser, J. (2002). *Das Tätigkeits- und Arbeitsanalyseverfahren für das Krankenhaus – Selbstbeobachtungsversion (TAA-KH-S)* [Activity and work analysis in hospitals – self-report version (TAA-KH-S)]. Göttingen: Hogrefe.

Büssing, A., & Perrar, K.-M. (1992). Die Messung von Burnout. Untersuchung einer Deutschen Fassung des Maslach Burnout Inventory (MBI-D) [The measurement of burnout. Testing a German version of the Maslach Burnout Inventory (MBI-D)]. *Diagnostica*, *38*, 328–353.

Caplan, R. D., Cobb, S., French, J. R. P., Van Harrison, R., & Pinneau, S. R. (1975). *Job demands and worker health*. Ann Arbor, MI: Institute for Social Research.

Caplan, L. J., & Schooler, C. (2006). Household work complexity, intellectual functioning, and self-esteem in men and women. *Journal of Marriage and Family*, *68*, 883–900.

Diestel, S., & Schmidt, K.-H. (2011a). Costs of simultaneous coping with emotional dissonance and self-control demands at work: Results from two German samples. *Journal of Applied Psychology*, *96*, 643–653.

Diestel, S., & Schmidt, K.-H. (2011b). The moderating role of cognitive control deficits in the link from emotional dissonance to burnout symptoms and absenteeism. *Journal of Occupational Health Psychology*, *16*, 313–330.

van Dijk, P. A., & Kirk Brown, A. (2006). Emotional labour and negative job outcomes: An evaluation of the mediating role of emotional dissonance. *Journal of Management and Organization*, *12*, 101–115.

Dormann, C., & Zapf, D. (1999). Social support, social stressors at work, and depressive symptoms: Testing for main and moderating effects with structural equations in a three-wave longitudinal sample. *Journal of Applied Psychology*, *84*, 874–884.

Dormann, C., & Zapf, D. (2002). Social stressors at work, irritation, and depressive symptoms: Accounting for unmeasured third variables in a multi-wave study. *Journal of Occupational and Organizational Psychology*, *75*, 33–58.

Dormann, C., & Zapf, D. (2004). Customer-related social stressors and burnout. *Journal of Occupational Health Psychology*, *9*, 61–82.

Finkel, S. E. (1995). *Causal analysis with panel data*. Thousand Oaks, CA: Sage.

Flouri, E., Hickey, J., Mavroveli, S., & Hurry, J. (2011). Adversity, emotional arousal, and problem behaviour in adolescence: The role of non-verbal cognitive ability as a resilience promoting factor. *Child and Adolescent Mental Health*, 16, 22–29.

Frese, M. (1987). A theory of control and complexity: Implications for software design and integration of computer systems into the work place. In M. Frese, E. Ulich, & W. Dzida (Eds.), *Psychological issues of human computer interaction in the work place* (pp. 313–337). Amsterdam: Elsevier.

Fried, Y., & Ferris, G. R. (1987). The validity of the job characteristics model: A review and meta-analysis. *Personnel Psychology*, 40, 287–322.

van Gelderen, B., Heuven, E., van Veldhoven, M., Zeelenberg, M., & Croon, M. (2007). Psychological strain and emotional labor among police-officers: A diary study. *Journal of Vocational Behavior*, 71, 446–459. doi:10.1016/j.jvb.2007.09.001

Grandey, A. A. (2000). Emotion regulation in the workplace: A new way to conceptualize emotional labor. *Journal of Occupational Health Psychology*, 5, 95–110.

Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect relationships, and well-being. *Journal of Personality and Social Psychology*, 85, 348–362.

Hacker, W. (2009). *Arbeitsgegenstand Mensch: Psychologie dialogisch-interaktiver Erwerbsarbeit* [The human as the object of labor: Psychology of dialogic-interactive work]. Lengerich, Germany: Pabst.

Hackman, J. R., & Oldham, G. R. (1976). Motivation through the design of work: Test of a theory. *Organizational Behavior and Human Performance*, 15, 250–279.

Hammond, M. M., Neff, N. L., Farr, J. L., Schwall, A. R., & Zhao, X. (2011). Predictors of individual-level innovation at work: A meta-analysis. *Psychology of Aesthetics, Creativity, and the Arts*, 5, 90–105.

Hasselhorn, H.-M., Müller, B. H., Tackenberg, P., University of Wuppertal, & NEXT-Study Coordination. (2005). *NEXT scientific report July 2005*. Wuppertal: University of Wuppertal.

Hertting, A., Nilsson, K., Theorell, T., & Sätterlund Larsson, U. (2003). Personnel reductions and structural changes in health care. Work-life experiences of medical secretaries. *Journal of Psychosomatic Research*, 54, 161–170.

Hobfoll, S. E. (2001). The influence of culture, community, and the nested-self in the stress process: Advancing conservation of resources theory. *Applied Psychology: An International Review*, 50, 337–421.

Hochschild, A. R. (1983). *The managed heart: Commercialization of human feeling*. Berkeley: University of California Press.

Holman, D., Martinez-Iñigo, D., & Totterdell, P. (2008). Emotional labour and employee well-being: An integrative review. In N. M. Ashkanasy & C. L. Cooper (Eds.), *Research companion to emotion in organizations* (pp. 301–315). Cheltenham: Edward Elgar.

Hu, L.-t., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6, 1–55.

Hülsheger, U. R., Lang, J. W. B., & Maier, G. W. (2010). Emotional labor, strain and performance: Testing reciprocal relationships in a longitudinal panel study. *Journal of Occupational Health Psychology*, 15, 505–521.

Hülsheger, U. R., & Schewe, A. F. (2011). On the costs and benefits of emotional labor: A meta-analysis of three decades of research. *Journal of Occupational Health Psychology*, 16, 361–389.

Ilgen, D. R., & Hollenbeck, J. R. (1991). The structure of work: Job design and roles. In M. D. Dunnette & L. M. Hough (Eds.), *Handbook of industrial and organisational psychology* (2nd ed., pp. 165–207). Palo Alto, CA: Consulting Psychology Press.

Kammeyer-Mueller, J. D., Rubenstein, A. L., Long, D. M., Odio, M. A., Buckman, B. R., Zhang, Y., & Halvorsen-Ganepola, M. D. (2013). A meta-analytic structural model of dispositional affectivity and emotional labor. *Personnel Psychology*, 66, 47–90.

Kohn, M. L., & Schooler, C. (Eds.). (1983). *Work and personality*. Norwood, NJ: Ablex Publishing.

Kramer, A. F., Bherer, L., Colcombe, S. J., Dong, W., & Greenough, W. T. (2004). Environmental influences on cognitive and brain plasticity during aging. *Journal of Gerontology: Medical Sciences*, *59*, M940–M957.

Kulik, C. T., Oldham, G. R., & Hackman, J. R. (1987). Work design as an approach to person-environment fit. *Journal of Vocational Behavior*, *31*, 278–296.

Lewig, K. A., & Dollard, M. F. (2003). Emotional dissonance, emotional exhaustion and job satisfaction in call centre workers. *European Journal of Work and Organizational Psychology*, *12*, 366–392.

Lüdtke, O., Robitzsch, A., Trautwein, U., & Köller, O. (2007). Umgang mit fehlenden Werten in der psychologischen Forschung [How to handle missing values in psychological research]. *Psychologische Rundschau*, *58*, 103–117.

Marsh, H., Wen, Z., & Hau, K.-T. (2004). Structural equation models of latent interactions: Evaluation of alternative estimation strategies and indicator construction. *Psychological Methods*, *9*, 275–300.

Masten, A. S., Hubbard, J. J., Gest, S. D., Tellegen, A., Garmezy, N., & Ramirez, M. (1999). Competence in the context of adversity: Pathways to resilience and maladaptation from childhood to late adolescence. *Development and Psychopathology*, *11*, 143–169.

McCauley, C. D., Ruderman, M. N., Ohlott, P. J., & Morrow, J. E. (1994). Assessing the developmental components of managerial jobs. *Journal of Applied Psychology*, *79*, 544–560.

Morgeson, F. P., & Humphrey, S. E. (2006). The Work Design Questionnaire (WDQ): Developing and validating a comprehensive measure for assessing job design and the nature of work. *Journal of Applied Psychology*, *91*, 1321–1339.

Nolan, M., Grant, G., Brown, J., & Nolan, J. (1998). Assessing nurses' work environment: Old dilemmas, new solutions. *Clinical Effectiveness in Nursing*, *2*, 145–156.

Philipp, A., & Schüpbach, H. (2010). Longitudinal effects of emotional labour on emotional exhaustion and dedication of teachers. *Journal of Occupational Health Psychology*, *15*, 494–504.

Reinecke, J. (2005). *Strukturgleichungsmodelle in den Sozialwissenschaften* [Structural equation models in the social sciences]. München: Oldenburg Verlag.

Richards, J. M., & Gross, J. J. (2000). Emotion regulation and memory: The cognitive costs of keeping one's cool. *Journal of Personality and Social Psychology*, *79*, 410–424.

Rubin, R. S., Staebler Tardino, V. M., Daus, C. S., & Munz, D. C. (2005). A reconceptualization of the emotional labor construct: On the development of an integrated theory of perceived emotional dissonance and emotional labor. In C. E. J. Härtel, W. J. Zerbe, & N. M. Ashkanasy (Eds.), *Emotions in organizational behavior* (pp. 189–211). Mahwah, NJ: Lawrence Erlbaum Associates.

Schafer, J. L. (2009). NORM. Version 2.02 for Windows 95/98/NT. Retrieved March 26, 2009, from http://www.stat.psu.edu/~jls/misoftwa.html

Schaubroeck, J., & Jones, J. R. (2000). Antecedents of workplace emotional labor dimensions and moderators of their effects on physical symptoms. *Journal of Organizational Behavior*, *21*, 163–183.

Schaufeli, W. B., Maassen, G. H., Bakker, A. B., & Sixma, H. J. (2011). Stability and change in burnout: A 10-year follow-up study among primary care physicians. *Journal of Occupational and Organizational Psychology*, *84*, 248–267.

Schaufeli, W. B., & Taris, T. W. (2005). The conceptualization and measurement of burnout: Common ground and worlds apart. *Work & Stress*, *19*, 256–262.

Schooler, C., Mulatu, M. S., & Oates, G. (2004). Occupational self-direction, intellectual functioning, and self-directed orientation in older workers: Findings and implications for individuals and societies. *American Journal of Sociology*, *110*, 161–197.

Semmer, N., Zapf, D., & Greif, S. (1996). 'Shared job strain': A new approach for assessing the validity of job stress measurements. *Journal of Occupational and Organizational Psychology*, *69*, 293–310.

Smith, B. W., Tooley, E. M., Christopher, P. J., & Kay, V. S. (2010). Resilience as the ability to bounce back from stress: A neglected personal resource? *Journal of Positive Psychology*, *5*, 166–176.

Taris, T. W., & Kompier, M. A. J. (2003). Challenges in longitudinal designs in occupational health psychology. *Scandinavian Journal of Work, Environment & Health*, *29*, 1–4.

Thorensen, C. J., Kaplan, S. A., Barsky, A. P., Warren, C. R., & Chermont, K. D. (2003). The affective underpinnings of job perceptions and attitudes: A meta-analytic review and integration. *Psychological Bulletin*, *129*, 914–945.

Wood, A. M., Linley, P. A., Maltby, J., Baliousis, M., & Joseph, S. (2008). The authentic personality: A theoretical and empirical conceptualization and the development of an authenticity scale. *Journal of Counseling Psychology*, *55*, 385–399.

Zapf, D. (2002). Emotion work and psychological well-being. A review of the literature and some conceptual considerations. *Human Resource Management Review*, *12*, 237–268.

Zapf, D., Dormann, C., & Frese, M. (1996). Longitudinal studies in organizational stress research: A review of the literature with reference to methodological issues. *Journal of Occupational Health Psychology*, *1*, 145–169.

Zapf, D., Vogt, C., Seifert, C., Mertini, H., & Isic, A. (1999). Emotion work as a source of stress: The concept and development of an instrument. *European Journal of Work and Organizational Psychology*, *8*, 371–400.