

Quantitative Versus Emotional Demands Among Swedish Human Service Employees: Moderating Effects of Job Control and Social Support

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The purpose of the current study was to conduct a longitudinal test of the moderating effect of both job control and social support on the relation between job demands and burnout in human service work. To adapt the study to human service work, quantitative as well as emotional demands were examined. A longitudinal survey with a 1-year time interval yielded a panel group encompassing 2,255 employees from the Social Insurance Organization in Sweden. Hierarchical regression analyses were used, controlling for demographic variables and the related dependent variable at Time 1. The analyses were conducted for quantitative and emotional demands separately and revealed main effects. Slightly more main effects were found for emotional demands. In addition, 1 interaction effect was found between emotional demands and job control with regard to emotional exhaustion. In

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The current study is part of the research programme on "Fatigue at Work" by NWO, the Dutch Organization for Scientific Research (Grant 580-02.209). The data have been made available by courtesy of Björn Söderfeldt.

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conclusion, the present study shows that emotional demands are as important as, and sometimes more important than, quantitative demands in human service work. Some practical implications and suggestions regarding future research are proposed.

KEY WORDS: emotional demands; human service workers; longitudinal study; burnout

Over the past decades, the nature of work has been changing in Europe (Marmot, Siegrist, Theorell, & Feeney, 1999; Peter & Siegrist, 1999). A shift has occurred from industrialized work to work in the service sector. Work is increasingly client driven and also more oriented toward information technology (Merllié & Paoli, 2001). Inherent to the changing nature of work is the change of demands related to this work; emotional and psychological demands have increased, whereas physical demands either decreased or remained the same (de Jonge, Mulder, & Nijhuis, 1999; Marmot et al., 1999). Particularly in human service work, the concept of emotional demands seems to be important because of (direct) contact with clients. Emotional demands can be defined as those aspects of the job that require sustained emotional effort because of interactional contact with clients (de Jonge & Dormann, 2003). For example, employees in human service organizations are confronted with many facets of human problems and suffering (e.g., poverty, disease and criminality) and may have problematic social interactions with clients (B. Söderfeldt et al., 1996; Ybema & Smulders, 2001). In addition, dealing with those situations requires expressing (organizationally desired) emotions, which are sometimes not genuinely felt by the employee (i.e., emotional dissonance; cf. Hochschild, 1983).

Although empirical research has noted the specific characteristics of human service work, attention has primarily been focused on the outcome side. That is, for a long time it has been acknowledged that human service workers are a special group who have a specific health outcome: burnout, which is due to “people work” or interactions with clients. Burnout has most often been cited as a syndrome of emotional exhaustion, depersonalization, and a lack of personal accomplishment (cf. Maslach, 1982). Even though many burnout researchers agree that excessive emotional demands are responsible for the development of burnout, most of them did not directly measure these kind of demands (e.g., Zapf, 2002; Zapf, Vogt, Seifert, Mertini, & Isic, 1999). For example, Schaufeli and Enzmann (1998) found only 16 burnout studies that measured emotional demands, and those studies were not conclusive with respect to the relation between emotional demands and emotional–psychological outcomes.

In a thorough review, Zapf (2002) scrutinized articles on emotion work

and showed that a relation exists between more direct measures of emotion work and burnout. Moreover, he concluded that control and social support moderate the relation between emotion work variables and burnout. The moderation of control and social support in the relation between work variables and health is the main focus of the well-known demand–control–support (DCS) model (Johnson & Hall, 1988; Karasek & Theorell, 1990). The DCS model postulates that the most adverse health effects are expected for a combination of high (psychological) demands, low control, and low social support (i.e., iso-strain). Therefore, the DCS assumption could be a starting point in studying emotion work variables and burnout. However, in line with Söderfeldt and colleagues (B. Söderfeldt et al., 1996, 1997), we agree that the DCS model, without use of a human service perspective, would give an oversimplified image and that in the case of human service work, the DCS model should be amended to include emotional demands.

Recently, some studies have been conducted exploring the concept of emotional demands, showing the importance of measuring both emotional (e.g., dealing with clients) and psychological demands (e.g., workload or quantitative demands) in human service employees. First, in a representative sample of the Dutch working population, Ybema and Smulders (2001), classified 4,334 respondents into 40 occupational groups and showed that 18.5% of the variance in these groups was explained by emotional demands. This means that occupations differ considerably in emotional demands. It should be noted that jobs including human interaction as a central aspect, in particular, scored higher on emotional demands (e.g., health care and education) than other jobs. Furthermore, emotional demands were positively related to emotional exhaustion, and adverse effects of emotional demands on emotional exhaustion were buffered by social support from coworkers to some extent.

Some studies tested different concepts of demands within a theoretical framework. In a study of 4,756 Swedish human service workers, B. Söderfeldt and colleagues (1997) showed that a stressor index composed of emotional demands and job control had a strong relation to psychosomatic health and exhaustion, whereas a parallel stressor index with quantitative demands was only related to exhaustion. In addition, de Jonge and colleagues (de Jonge et al., 1999; de Jonge, Dollard, Dormann, Le Blanc, & Houtman, 2000) tested both emotional and psychological demands combined with job control. Interactions were found for emotional as well as psychological demands with job control. In another study, de Jonge and Hamers (2000) tested different demands in combination with occupational rewards in 116 Dutch health care employees. Elevated risks were found for emotional exhaustion, with the strongest risks for high emotional demands combined with low occupational rewards. In a similar vein, in a sample of

167 Dutch health care workers, van Vegchel, de Jonge, Meijer, and Hamers (2001) found elevated risks for three out of four health outcomes for emotional demands and two elevated risks for psychological demands, in cases of effort–reward imbalance (i.e., high demands and low occupational rewards).

Furthermore, two studies have shown the importance of emotional demands in relation to musculoskeletal symptoms. In a study among Finnish staff of residential homes, nursing homes, and home help services ($N = 204$), Elovainio and Sinervo (1997) found that patient-related stressors (i.e., troublesome patients with dementia symptoms) and time pressure influenced psychological stress symptoms separately, which influenced musculoskeletal symptoms. The effect of patient-related stressors was almost as strong as time pressure. In another study, among 200 Danish female nurses, by Gonge, Jensen, and Bonde (2002), self-report measures of time pressure, emotional demands, control, and support were collected by questionnaire at baseline, whereas low back pain, strain, and physical exertion were reported by diary records in the subsequent 6 months. Although only a relation was found between stress and low back pain, additional analyses showed that emotional demands and time pressure were significantly related to strain (whereas control and social support were not). In addition, participants experiencing high emotional demands were the same as those with high stress scores, and they also reported high levels of low back pain, whereas this was not the case for respondents scoring high on time pressure. This indicates a possible pathway connecting emotional demands to low back pain through the mediation of strain.

To recapitulate, the previous studies show that emotional demands differ considerably among occupations and that emotional demands are particularly important for jobs that include client interaction (Ybema & Smulders, 2001). Furthermore, these studies demonstrate that the relation between emotional demands and employee well-being is moderated by social support (Ybema & Smulders, 2001) as well as by job control (de Jonge et al., 1999, 2000; B. Söderfeldt et al., 1997). Moreover, most studies demonstrate that emotional demands are at least as important, or more important, than psychological–quantitative demands in relation to employee well-being in human service occupations (de Jonge et al., 1999, 2000; de Jonge & Hamers, 2000; Elovainio & Sinervo, 1997; Gonge et al., 2002; B. Söderfeldt et al., 1997; van Vegchel et al., 2001). Therefore, emotional demands seem to be an essential complement to the more general psychological demands, particularly in human service work. However, most of the studies mentioned used a cross-sectional design. Although cross-sectional studies can provide valuable knowledge concerning associations, it is problematic to causally interpret relationships between job characteristics and employee well-being. According to Cook and Campbell (1979),

to causally interpret a relation, three requirements should be fulfilled. First, there should be a statistical association between X and Y. Second, the independent–causal variable X precedes the dependent–outcome variable Y in time. Third, the influence of third variables can be excluded. Because cross-sectional survey cannot grant the second requirement (time-lagged measurement of X and Y), it is better to investigate causal relationships with longitudinal research.

The purpose of the present study is a longitudinal test of the moderating effect of job control and social support on the relation between job demands and burnout in human service work. To adapt the study to human service work, we tested both quantitative and emotional demands, in relation to (an originally human service outcome) burnout. We assumed that, for human service workers, the effects of emotional demands on burnout are stronger than the effects of (more general) quantitative demands (cf. de Jonge et al., 2000; de Jonge & Hamers, 2000; Gonge et al., 2002; B. Söderfeldt et al., 1997; van Vegchel, de Jonge, Bakker, & Schaufeli, 2002). Using the DCS model as a starting point, we hypothesized that high job demands, low job control, and low social support (all measured at Time 1) would have the most detrimental effects on burnout (Time 2). Furthermore, we assumed that job control, as well as social support, moderate the relation between job demands and burnout (i.e., a buffer effect; cf. Karasek & Theorell, 1990; Zapf, 2002). In addition, we tested the combined effect of job control and social support on the relation between demands and burnout (i.e., a three-way interaction). For all previously mentioned hypotheses, we assumed that the emotional demands would have a stronger impact than quantitative demands.

METHOD

Sample and Procedure

A survey with a panel design was conducted among employees in the Social Insurance Organization (SIO) in Sweden. The SIO is the main Swedish agency for the general welfare policies with a coordinating responsibility for rehabilitation of individual clients. The organization can thus be considered a human service organization (Hasenfeld, 1983). The sample consisted of employees in local units of the SIO in a random sample of 100 Swedish communes. Within these communes, all local units and all personnel of these units were included.

The employees responded to a questionnaire at two measurement points with a 1-year time interval. In this way, possible seasonal influences

could be controlled for. In addition, 1 year seems to be long enough for individual changes to occur and not too long to lose many of the respondents. At Time 1 (April 1997) 4,169 employees in the local units received the questionnaire. The response rate was 76%, or 3,173 persons. At Time 2 (April 1998), there were 4,016 employees in the units, where 71% responded to the questionnaire. The final panel consisted of 2,255 persons (56% of the participants from 1998) who responded to the questionnaire at both occasions.

The demographic characteristics of the respondents in the final panel showed that the ages ranged from 22 to 64 years ($M = 47.0$, $SD = 6.5$). Most respondents were women (85.9%), and 14.1% were men. The mean working time was 22.2 years ($SD = 7.4$), and 71.9% of the employees worked on a full-time basis. The most common function of respondents was the handling of cases (75.3%). The remaining respondents were active in coordination, manager support, personnel management, service, and consultation.

Measures

Demographic Variables

The demographic characteristics of gender, age, and education were included as control variables to prevent a confounded relationship among work-related factors and outcome variables, because some studies indicate that burnout is associated with age, gender, and educational level (Schaufeli & Enzmann, 1998). For example, on balance, women tend to score slightly higher on emotional exhaustion, whereas men score higher on depersonalization.

Job Demands

Job demands were measured by two different types of work-related demanding aspects: quantitative demands (e.g., workload) and emotional demands. A principal factor analysis (PAF) with an oblique rotation clearly showed two different factors for Time 1 and Time 2, which accounted for 48.78% and 49.25%, respectively, of the variance. The correlation between the scales that were based on these factors was .43 at Time 1 and .45 at Time 2.

Quantitative demands. Quantitative demands were measured with four items that inquired about workload and overtime. The questions are

partly derived from standard measures used in applications of the DC model (Härenstam, 1989; Karasek, 1979; Karasek & Theorell, 1990). The response scale ranged from 1 (always) to 5 (never). An example item is, "Do you think that your work tasks are demanding due to their quantity even if the tasks themselves are not very difficult?" Note that item coding was reversed for analysis.

Emotional demands. This scale, developed by M. Söderfeldt (1997), consisted of eight statements concerning emotional exertions at work. Participants were asked to indicate to what extent the statements were emotionally demanding, for example, "to handle troublesome clients." The response scale ranged from 1 (not particularly) to 5 (very much).

Job Resources

Job control. Job control was measured by an eight-item questionnaire with a 5-point response scale ranging from 1 (never) to 5 (very often), based on the work of Härenstam (1989). An example is, "Can you decide work pace yourself?"

Social support. Social support was measured with the help of a 7-item questionnaire (5-point response scale ranging from 1 [always] to 5 [never]) from Härenstam (1989). The questionnaire contains items about support and respect from supervisors as well as from colleagues: for example, "Do you get enough support when you have too much to do?" Item coding was reversed for analysis.

Burnout

Professional burnout was measured with a Swedish translation (M. Söderfeldt, 1997) of the Maslach Burnout Inventory (MBI; Maslach & Jackson, 1986). The burnout scale consisted of three subscales: Emotional Exhaustion (9 items), Depersonalization (5 items), and Personal Accomplishment (8 items). The psychometric properties of the (translated) MBI were very satisfactory and stable in another study on Swedish workers (M. Söderfeldt, Söderfeldt, Warg, & Ohlson, 1996). The questions were answered on a 7-point scale, ranging from 0 (never) to 6 (every day).

Statistical Design

To test the relationships between job characteristics and burnout over time, hierarchical regression analyses were performed. Interaction terms

between job demands and job resources were composed to test the moderating effect of job resources (job control and social support) on job demands (quantitative and emotional) with regard to burnout. Several authors recommended hierarchical regression analyses, including multiplicative terms, to test interactions between continuous variables, because in this way main effects are controlled for (Aiken & West, 1991). In Step 1 we entered the control variables, which were gender, age, and education. Step 2 contained the corresponding dependent variable, Time 1 (Zapf, Dormann, & Frese, 1996). In Step 3 the independent variables at Time 1 were entered. Sequentially, Step 4 contained the two-way interaction terms of job demands and job resources, and finally Step 5 contained the three-way interaction term (i.e., multiplication of job demands by job control by social support). An additive model (entered in Step 3) was compared with both interactive models (entered in Steps 4 and 5) to test whether the interaction term contributes significantly in the prediction of the dependent variable, using an incremental *F*-test procedure (Jaccard, Turrisi, & Wan, 1990). In those analyses, centered job characteristics were used (i.e., subtracting the mean value from each score, i.e., the so-called deviation scores) to reduce the problem of multicollinearity. Unstandardized regression coefficients are presented in Tables 2 and 3, accordingly (Aiken & West, 1991; Jaccard et al., 1990).

Regression analyses were calculated for quantitative and emotional demands separately. Although it is possible to include both concepts of demands in one analysis, we decided to separate the analysis for two reasons. First, by including quantitative as well as emotional demands, the interaction terms with regard to quantitative demands possibly could interfere with the similar interaction terms formulated for emotional demands, leading to problems of collinearity. Second, by doing a combined analysis, too many interaction terms would have to be included into one analysis.

RESULTS

Descriptive Analyses

Table 1 shows the reliability coefficients (Cronbach's alpha) and the means and standard deviations for Time 1 and Time 2 variables. With the exception of quantitative demands and job control, the reliability coefficients were sufficient, ranging from .69 to .91. The means and standard deviations for Time 1 were comparable with the means and standard deviations for Time 2. The test-retest correlations, ranging from .58 to .68,

Table 1. Basic Statistics of the Study Variables and Pearson Correlations Between the Study Variables

Variable	N item	Time 1			Time 2			Range	1	2	3	4	5	6	7
		α	<i>M</i>	<i>SD</i>	α	<i>M</i>	<i>SD</i>								
1. Q. dem.	4	.61	3.23	0.64	.62	3.22	0.66	1.0–5.0	.62**	.29**	-.06**	-.35**	.58**	.19**	.01
2. Em. dem.	8	.87	3.32	0.81	.91	3.26	0.80	1.0–5.0	.30**	.64**	-.11**	-.14**	.37**	.24**	-.12**
3. Control	8	.63	3.47	0.46	.60	3.67	0.44	1.0–4.9	-.27**	-.21**	.58**	.25**	-.31**	-.25**	.33**
4. Soc. sup.	7	.80	3.02	0.67	.80	3.00	0.68	1.0–5.0	-.29**	-.14**	.31**	.68**	-.40**	-.19**	.17**
5. EE	9	.88	2.36	1.13	.89	2.36	1.14	0.0–6.0	.56**	.38**	-.45**	-.34**	.68**	.47**	-.14**
6. DP	5	.69	1.31	0.94	.72	1.24	0.94	0.0–6.0	.24**	.25**	-.26**	-.17**	.49**	.64**	-.26**
7. PA	8	.85	4.12	0.91	.83	4.12	0.92	0.0–6.0	.01	-.11**	.29**	.15**	-.12**	-.25**	.63**

Note. Below diagonal: correlations at Time 1; above diagonal: correlations at Time 2; boldface numbers = test-retest correlations. Q. dem. = quantitative demands; Em. dem. = emotional demands; control = job control; soc. sup. = social support; EE = emotional exhaustion; DP = depersonalization; PA = personal accomplishment.

** $p < .01$.

showed that the scales for job characteristics and well-being indicators are stable over time. The (cross-sectional) correlations between the independent and the dependent variables were all significant and in the expected directions, with the exception of the nonsignificant correlation between quantitative demands and personal accomplishment. Those results applied to the correlations for Time 1 and for Time 2, respectively.

Regression Analyses

To test the influence of Time 1 job characteristics (i.e., demands, job control, and social support) on Time 2 burnout (i.e., emotional exhaustion, depersonalization, and lack of personal accomplishment), a series of hierarchical regression analyses were performed. The hierarchical regression analyses were successively conducted with two types of demands: quantitative demands (Table 2) and emotional demands (Table 3). More specifically, emotional exhaustion, depersonalization, and lack of personal accomplishment, measured at Time 2, were predicted by quantitative or emotional demands, job control, and social support measured at Time 1 and controlled for demographic variables and the concerning dependent variable at Time 1.

Table 2 shows the results of the hierarchical regression analyses that predicted emotional exhaustion, depersonalization, and personal accomplishment at Time 2, by demographic variables, quantitative demands, job control, and social support at Time 1. As can be seen from Table 2, an additive model fit the data best for all burnout variables. This means that significant main effects were found, but no significant additional variance was explained by both the two-way and three-way interaction terms. This is shown by the nonsignificant R^2 change for the interaction terms. The main effects show that all Time 1 job characteristics were associated with Time 2 emotional exhaustion. That is, a positive association was detected between quantitative demands and emotional exhaustion, and a negative association was found among job control as well as social support and emotional exhaustion. More practically, this means that an increase (or decrease) of quantitative demands, as well as a decrease (or increase) of job control and social support at Time 1, are independently related to an increase (or decrease) in emotional exhaustion at Time 2. For depersonalization, one main effect appeared: Former job control was negatively related to subsequent depersonalization. Finally, both Time 1 quantitative demands and Time 1 job control were positively associated with Time 2 personal accomplishment. What is remarkable is the positive association

Table 2. Hierarchical Multiple Regression Analyses of Quantitative Demands, Job Control, and Social Support (at Time 1) on Burnout (at Time 2), Corrected for Demographic Variables and the Dependent Variable at Time 1 (Due to List-Wise Deletion, $n = 2,081$)

Quantitative demand	Emotional exhaustion		Depersonalization		Personal accomplishment	
	<i>B</i>	ΔR^2	<i>B</i>	ΔR^2	<i>B</i>	ΔR^2
Age	-.01*		-.01**		.00	
Gender	.08		-.00		-.01	
Education	.00	.007**	-.01	.012***	-.01	.001
Dependent variable at Time 1	.61***	.461***	.62***	.401***	.60***	.393***
Quantitative demands (QD)	.12**		.02		.07**	
Job control (JC)	-.10*		-.14***		.17***	
Social support (SS)	-.07*	.008**	-.04	.006***	.04	.009***
QD × JC	.07		-.02		.03	
QD × SS	.02		-.05		-.03	
JC × SS	-.15	.001	.01	.001	.06	.001
QD × JC × SS	.07	.000	.04	.000	-.07	.000
R^2		.48		.42		.40

Note. All coefficients were taken from the last step of the equation.
 * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3. Hierarchical Multiple Regression Analyses of Emotional Demands, Job Control, and Social Support (at Time 1) on Burnout (at Time 2), Corrected for Demographic Variables and the Dependent Variable at Time 1 (Due to List-Wise Deletion, $n = 1,859$)

Emotional demand	Emotional exhaustion		Depersonalization		Personal accomplishment	
	<i>B</i>	ΔR^2	<i>B</i>	ΔR^2	<i>B</i>	ΔR^2
Age	-.00		-.01*		.00	
Gender	.09		-.03		.00	
Education	.01	.005*	-.01	.012***	.00	.000
Dependent variable at Time 1	.63***	.465***	.62***	.408***	.59***	.381***
Emotional demands (ED)	.09***		.04*		-.05*	
Job control (JC)	-.10*		-.14**		.17***	
Social support (SS)	-.08*	.008**	-.04	.008***	.02	.011***
ED \times JC	.12*		.06		-.04	
ED \times SS	.02		-.01		.03	
JC \times SS	.02	.002†	.07	.001	.05	.001
ED \times JC \times SS	-.02	.000	-.00	.000	-.00	.000
R^2		.48		.43		.39

Note. All coefficients were taken from the last step of the equation.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

between quantitative demands and personal accomplishment: Even though quantitative demands increase (or decrease) at Time 1, personal accomplishment will also increase (or decrease) at Time 2.

In Table 3 the results of the hierarchical regression analyses are shown for the demographic variables, emotional demands, job control, and social support at Time 1 in relation to burnout at Time 2. Table 3 shows that additional variance was significantly explained by one interaction term with regard to emotional exhaustion ($\Delta R^2 = .002, p < .10; B = .12, p < .05$). The significant interaction appeared between Time 1 emotional demands and Time 1 job control with regard to Time 2 emotional exhaustion. To examine the interaction, we drew a plot (Aiken & West, 1991). The values of the predictor variables were chosen one standard deviation below and one standard deviation above the mean (Y. Cohen & Cohen, 1983). The regression lines were produced by entering these values in the regression equation. Figure 1 shows the graphical presentation of the interaction with regard to emotional exhaustion. For low emotional demands ($-1 SD$), high job control ($1 SD$) reduced emotional exhaustion, but the more emotional demands increased, the more this effect diminished.

For depersonalization and personal accomplishment, only significant main effects were found. Although Time 1 emotional demands were positively related to Time 2 depersonalization, job control at Time 1 was negatively associated with depersonalization at Time 2. Therefore, an increase in emotional demands and a decrease in job control were related to an increase in depersonalization 1 year later. For Time 2 personal accomplishment, exactly the opposite was found: A decrease in former emotional

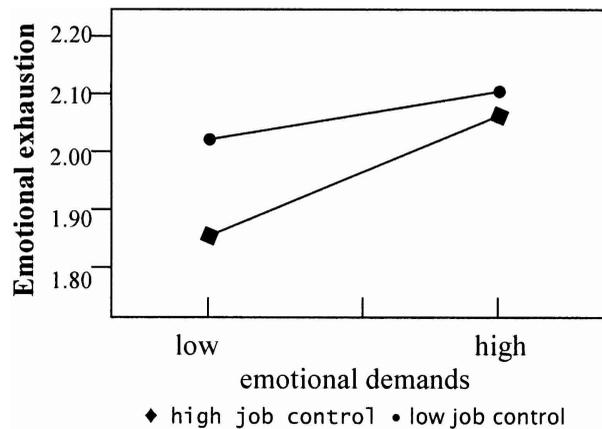


Figure 1. Interaction between emotional demands and job control with regard to emotional exhaustion.

demands and an increase in former job control were associated with an increase in later personal accomplishment.

Comparing the effects of quantitative demands versus the effects of emotional demands shows that emotional exhaustion was more highly correlated with quantitative demands as opposed to emotional demands. However, depersonalization and personal accomplishment were more highly correlated with emotional demands. The regression analyses showed that main effects were found for both quantitative and emotional demands with regard to the burnout variables. Only one main effect between quantitative demands and depersonalization was lacking (whereas this main effect was found for emotional demands). One small significant interaction effect was found for emotional demands, whereas no interaction effects were found for quantitative demands.

DISCUSSION

The aim of the current study was to conduct a longitudinal test of the moderating effect of job control and social support on the relation between job demands and burnout in human service work. To capture the specific nature of working with clients, quantitative as well as emotional demands were examined in relation to burnout (which was originally a human service outcome). Generally, we assumed that high demands, low control, and low social support (all measured at Time 1) would lead to an adverse health effect in terms of burnout (Time 2). Moreover, we hypothesized that the negative effects of (high) job demands could be buffered by (high) control and/or (high) social support. Several studies found that emotional demands, in comparison with quantitative demands, have a stronger effect on human service employees' well-being (de Jonge et al., 2000; de Jonge & Hamers, 2000; Gonge et al., 2002; B. Söderfeldt et al., 1997; van Vegchel et al., 2002). Therefore, an additional assumption was that emotional demands would have a stronger impact than quantitative demands.

In general, main effects of (both types of) demands, control, and social support (Time 1) on burnout (Time 2) were found in the expected direction. A notable exception however is the positive association between quantitative demands and personal accomplishment, meaning that an increase (or decrease) in quantitative demands is associated with an increase (or decrease) in personal accomplishment 1 year later. A possible explanation could be that human service workers with a history of more quantitative demands (i.e., being able to do more in less time) regard themselves as more competent, or become more competent, in handling cases. With regard to emotional exhaustion, it should be mentioned that the strongest

associations were found for both quantitative and emotional demands. This result is in line with the job demands–resources model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001), which assumes that job demands are primarily and positively related to exhaustion. However, unlike the job demands–resources model, not all associations among job resources (i.e., job control and social support) and personal accomplishment were significant. Social support was only significantly related to emotional exhaustion. Perhaps emotional exhaustion can be more directly influenced by help from colleagues and/or a supervisor in the case of having too much to do, whereas depersonalization and personal accomplishment might be more dependent on the person's own skills. Hence, job control was significantly related to all burnout variables. This is in accordance with most empirical studies concerning the DCS model: Decision latitude has been of greater significance empirically in most studies than have psychological demands (Theorell, 2001).

In general, the same main effects were significant for quantitative as well as for emotional demands, showing that emotional demands are at least as important as quantitative demands. In addition, emotional demands were also associated with depersonalization, whereas quantitative demands were not. Theoretically, depersonalization involves a more detached relation with clients. Working with clients is a core element of emotional demands, and because this is not the case for quantitative demands, this seems to be theoretically reasonable. Therefore, all in all, emotional demands showed slightly more main effects than quantitative demands.

Beyond main effects, only one interaction was found: Job control moderated the relation between emotional demands and emotional exhaustion. Figure 1 shows that job control is more likely to reduce exhaustion in cases of low emotional demands compared with instances where emotional demands are high. Perhaps, in the case of low emotional demands, such as having a troublesome client once a week, control may be used to ask colleagues to deal with the problem rather than doing it by oneself. However, in the case of high emotional demands, such as having a troublesome client every hour, such forms of control are not of much use because one cannot reasonably ask colleagues to take over almost all tasks. To put it differently, in the case of low demands, resources loosely fitting the demands may be of some use, whereas in the case of higher demands, a good match should exist between demands and resources. This is suggested by the match principle (S. Cohen & Wills, 1985; de Jonge & Dormann, 2003; Frese, 1999), which implies that job control as a resource does not “match” with emotional demands, and therefore job control is not a reduction mechanism of (high) emotional demands. However, these arguments do not cover the fact that employees generally benefit from having control at work.

Limitations

A few points of consideration should be noted for the present study. First, the hierarchical regression analyses showed one significant (albeit not very strong) interaction. Test–retest correlations showed that the burnout variables were very stable over time; therefore not much variation had been left to be explained by the job characteristics and/or their interactions (cf. Schaufeli & Enzmann, 1998). Although the amount of variance is relatively small and there might be a capitalization on chance as well, this does not negate the theoretical importance or mean that the interaction effect has little substantive significance (see also Frese & Zapf, 1988; Wall, Jackson, Mullarkey, & Parker, 1996). The results are nevertheless important because the size of the interaction effect is attenuated by measurement error when interaction terms are formed by multiplying variables to form cross-product terms, as is required in regression analyses (Aiken & West, 1991). Also, Semmer, Zapf, and Greif (1996) indicated there is an upper limit of 10% of the variance that can be explained by a stressor–strain relationship, which is due to methodological considerations as well as the multicausal etiology of (poor) well-being. Therefore, we think that the results do have theoretical value, showing only an interaction with emotional demands, whereas no interactions were found for quantitative demands.

Second, the reliabilities of quantitative demands and job control were low (ranging from .60 to .63). Therefore, one should be careful with interpretations regarding the associations with quantitative demands and job control and the application of the results to the DCS model.

Third, the participants of the present study all came from the same organization. This may have led to range restrictions, which limit the possibility to find interaction effects. In particular, the standard deviations of control and support were low. This may reflect certain aspects of the organization's climate, such as its use of empowerment strategy or the level of emphasis placed in good social relations. Because a climate is shared among members of the same organization (e.g., Schneider, White, & Paul, 1998), employees should report similar perceptions (e.g., with regard to resources). In particular, in services, it is reasonable to assume that resources such as support or control may vary more between organizations and less within organizations, compared with demands, which may depend more on the clients. Therefore, it could be that interaction effects were attenuated by the range restriction of the resources in the organization under investigation.

Finally, it would be advisable to include more (occupation) specific variables, such as a measure of job control and social support. For example, instead of general measures of job control and social support, particular

forms of control and support such as emotional control and emotional support may better reflect the occupational peculiarities (e.g., Zapf et al., 1999). In contrast to emotional demands and burnout, there was no (occupation) specific measure of a resource in the present study. With the help of occupation-specific resources, theoretically more similar (human service) constructs could be investigated. In addition, it could possibly be easier to find interactions because of the matching constructs of demands, resources, and health outcomes (cf. de Jonge & Dormann, 2003).

Practical Implications

Despite the limitations, the results have shown that burnout in human service workers is related to quantitative and emotional demands, job control, and social support. Job control was related to all burnout variables over time (i.e., emotional exhaustion, depersonalization, and personal accomplishment). Therefore, it seems useful that in order to reduce burnout organizations should increase job control by taking several measures. For example, task enrichment and decentralization of authority (empowerment) are useful tools to enlarge job control, giving employees more opportunities to develop themselves and work in a more efficient way. In addition, for human service organizations, it could be advisable to phase in a client-oriented system, instead of a task-oriented system (which is more common). Often, employees are torn between rules of bureaucracy and the individual interest for the client. By implementing a client-oriented system (a climate for service; Schneider et al., 1998), employees could find more client-friendly solutions, which in the end are also better for the organization. Another job characteristic related to all burnout variables was emotional demands. To regulate this kind of demand, emotionally demanding tasks could be varied with nonemotionally demanding tasks, giving the opportunity to take some distance from work. It should be noted that the interaction between job control and emotional demands warns for some possible negative effects of having high emotional demands in combination with high job control. Therefore, the type of job control to regulate emotional demands seems to be important and should be matched with the type of demands. A climate for service seems to be a solution to have more job control without interfering with emotional demands. That is, emotional demands could be held under control by having a more client-oriented operating procedure. In this respect, Dormann, Spethmann, Weser, and Zapf (2003) recently proposed the concept of customer-oriented control. Customer-oriented control provides employees with decision authority on behalf of the customers. Because most service providers do want to provide

good service, customer-oriented control can be expected not only to serve customers' but also employees' needs and desires.

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