

Burnout and reciprocity: towards a dual-level social exchange model

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A tentative dual-level social exchange model of burnout and organizational commitment is proposed that includes social exchange relationships at the interpersonal level (i.e. between human services professional, or caregiver, and recipient) as well as at the organizational level (i.e. between employees and organization). The model was tested and cross-validated in two independent samples that consisted of 220 and 142 student nurses, respectively, by using linear structural modelling with LISREL VII. The hypothesized model assumes that lack of reciprocity at both levels is positively related to burnout, whereas poor organizational commitment is exclusively related to lack of reciprocity at the organizational level. This model fitted reasonably well to the data of both samples. The limitations of the study and its practical implications are discussed, and directions for future research on the dual-level social exchange model are proposed.

1. Introduction

Since its 'discovery' in the early 1970s, burnout has attracted much attention in the popular press, the professional field, and the scientific community. After 15 years of research, Kleiber and Enzmann (1990) listed nearly 2500 publications on burnout, most of which pertain to the human services. To date, the number of publications has risen to well over 3800. Maslach and Schaufeli (1993) distinguished between two phases in burnout research. In the pioneer phase, research was characterized by pragmatic rather than by scholarly concerns. The early burnout literature was mostly non-empirical and relied heavily on unsystematic observations. In the next empirical phase, research was stimulated by the introduction of short and easy-to-administer burnout self-report instruments. However, most studies remained rather descriptive in nature and were not guided by an overarching theoretical framework.

Most recently, there is a growing number of comprehensive conceptual approaches that have been proposed to link burnout to other major psychological theories (Schaufeli *et al.* 1993). This paper follows the theory-guided approach to burnout by combining two major research traditions that draw upon social exchange in interpersonal and organizational relationships, respectively. More particularly, the authors propose a preliminary model that includes social exchange at the interpersonal level (i.e. between human services professional, or caregiver, and recipient) as well as exchange at the organizational level (i.e. between employee and organization) in relation to burnout and organizational commitment.

The focal dependent variables included in the present study (i.e. burnout and organizational commitment) are particularly relevant for organizations because they may lead to behavioural and cognitive withdrawal. For instance, Firth and Britton (1989) showed that burnout leads to higher levels of absenteeism and turnover among British

nurses. In a similar vein, recent meta-analytic studies conclude that poor organizational commitment may lead to lateness, poor attendance but particularly to turnover and turnover-related intentions (Mathieu and Zajac 1990, Randall 1990).

1.1 *Social exchange, equity and reciprocity*

Equity theory is probably the most influential social exchange theory that has been applied at the interpersonal as well as at the organizational level (cf. Walster *et al.* 1978). According to equity theory, people pursue reciprocity in interpersonal and in organizational relationships: what they invest and gain from a relationship should be proportional to the investments and gains of the other party in the relationship. Reciprocity has been defined by Adams (1965, p. 278) as the equality of exchange between parties. In his classical 'equity formula' (p. 280), this is expressed by the ratios of the investments and outcomes of the target person and those of the other party, respectively. A lack of reciprocity ('inequity') exists when the latter outweighs the former.

It has been correctly noted by Chadwick-Jones (1976, p. 234) that equity and reciprocity—as used in Adams's original theory—are 'almost identical terms'. Therefore, some additional clarification is needed. Essentially, the concept of equity involves a process of social comparison: one's own investments and outcomes are compared with those of another (real or hypothetical) party. However, Pritchard (1969, p. 205) criticized equity theory for neglecting the role of internal standards as a means for comparison. According to Pritchard, internal standards refer to the amount of outcome a person perceives as being commensurate with his or her own inputs, without regard to any other party. Hence, inequity arises from the lack of correspondence between the person's own inputs and outcomes. Instead of *social* comparisons as assumed by classic equity theory, Pritchard (1969) suggests that *intra-personal* comparisons play a crucial role in social exchange processes. Following Pritchard's line of reasoning, reciprocity is defined here as the equality of perceived investments and outcomes relative to the person's own internal standards.

1.2 *Reciprocity at the interpersonal level*

Recently, Buunk and Schaufeli (1993) made an attempt to link burnout with social exchange processes at the interpersonal level. Their central thesis is that burnout develops primarily in the social and interpersonal context of a work organization. They follow the notion of Maslach (1982) that burnout is a syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment that is rooted in the emotionally demanding interpersonal relationship between caregiver and recipient. By definition this relationship is complementary in the human services, which is also semantically well-illustrated by the terms caregiver and recipient. Therefore, it is likely that a lack of reciprocity develops, whereby caregivers feel that they continuously put much more into relationships with their recipients than they receive back in return. This may eventually deplete their emotional resources and thus lead to burnout.

According to Buunk and Schaufeli (1993), it can be inferred from equity theory that this lack of reciprocity and the resulting emotional exhaustion can be dealt with—among others—by decreasing one's investments in the relationships with recipients, thereby at the same time lowering their outcomes. That is, by responding to them in a depersonalized (i.e. derogatory, callous and cynical) way instead of expressing genuine empathic concern. Indeed, significant correlations have been found between lack of reciprocity and all three dimensions of burnout in several occupational groups such as nurses (Schaufeli and Janczur 1994, Van Yperen *et al.* 1992), general practitioners (Van Dierendonck *et al.* 1994), and

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correctional officers (Schaufeli *et al.* 1994). Accordingly these findings suggest that an imbalanced social exchange relationship between human services professional and recipient that is characterized by a lack of reciprocity might lead to burnout. In the present study, the authors expect to replicate the positive relationship between lack of reciprocity and burnout (*Hypothesis 1*)

1.3 Reciprocity at the organizational level

It has been argued that, in addition to the interpersonal perspective, burnout should also be considered within an organizational context (Golembiewski and Munzenrider 1988, Cox *et al.* 1993). Indeed, a vast array of research has demonstrated that burnout is positively related to particular job characteristics (e.g. work load, role problems and lack of autonomy), lack of social support from colleagues and supervisors, and organizational withdrawal behaviours (e.g. turnover, intention to quit, absenteeism and tardiness). For recent reviews see Cordes and Dougherty 1993, Schaufeli and Buunk 1996. Unfortunately, authors who favoured an organizational perspective on burnout provided only heuristic models that have been very successful in stimulating research, but they did not offer any specific psychological explanation for the development of burnout in an organizational setting.

Drawing upon the notion of a psychological contract (Rousseau and Parkes 1993) it can be argued that similar social exchange processes that are observed in interpersonal relationships govern the relationship of the employee with his or her organization. The psychological contract is defined in terms of expectations held by employees about the nature of their exchange with the organization. Expectations concern concrete issues such as workload, as well as less tangible matters such as esteem and dignity at work, and support from supervisors and colleagues. The psychological contract reflects the employees' subjective notion of reciprocity by acting as an internal standard (s)he expects gains or outcomes from the organization that are proportional to his or her investments or inputs. When the psychological contract is violated because experience does not match expectations, reciprocity is corroded and cognitive and behavioural withdrawal may result in such outcomes as dissatisfaction (Syroit *et al.* 1993), intention to quit and turnover (Guzzo *et al.* 1994, Robinson and Rousseau 1994), and absenteeism (Geurts *et al.* 1993)

It is hypothesized that burnout might result when the psychological contract is violated and the employee perceives a lack of reciprocity in his or her relationship with the organization (*Hypothesis 2*). This is in line with Brill (1984, p. 15), who stressed the role of the employee's expectations by defining burnout as an 'expectationally mediated, job-related dysphoric and dysfunctional state'. Moreover, Cherniss (1980) pointed out that the unrealistic expectations often found among newcomers in the caring professions are not restricted to the relationship with recipients, but involve the organizational environment as well. He argues that when high expectations (for example, about autonomy or collegiality at work) clash with the harsh reality, young professionals might develop burnout. As noted before, unmet expectations are the crucial element of the violation of the psychological contract. From the perspective of equity theory, lack of reciprocity and the resulting emotional exhaustion that is experienced when the psychological contract is violated can be dealt with by decreasing one's investment, thereby simultaneously lowering the organization's outcomes. The investment can be lowered, for instance, by not treating the recipients appropriately as subjects who need care, attention and so on, but as impersonal objects. Such a depersonalized attitude not only expresses one's decreased readiness to invest emotionally in recipients, but it might also lower the organization's outcomes since it is likely to deteriorate the quality of the services provided.

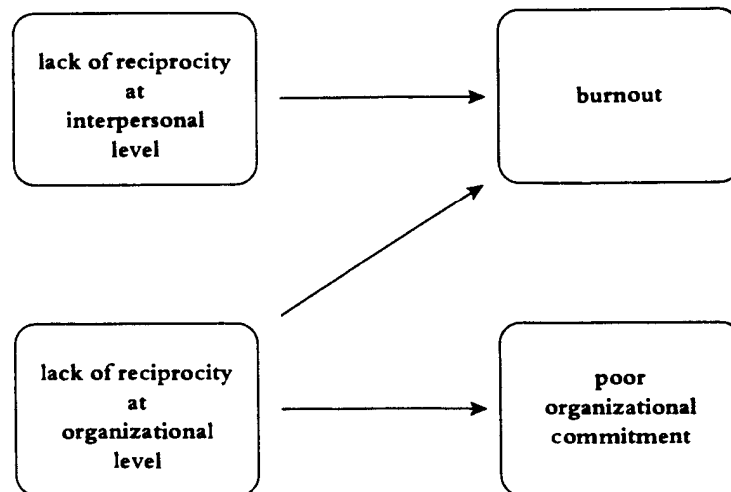


Figure 1 The hypothetical dual-level social exchange model

In the present study, organizational commitment is included in addition to burnout as the second focal dependent variable. According to Mowday *et al.* (1979, p. 226), organizational commitment is 'the relative strength of an individual's identification with and involvement in a particular organization'. It is an affective response resulting from the evaluation of the work situation that links or attaches the employee to the organization. Similar to burnout, organizational commitment results from an exchange process. For instance, Etzioni (1961, p. 10), considered organizational commitment as 'A lower-intensity relationship based on a rational exchange of benefits and rewards'. In a similar vein, but within the tradition of social exchange theory, commitment is regarded as a function of investments and outcomes (Farrell and Rusbult 1981). Employees reduce their levels of commitment when they perceive a lack of reciprocity in the social exchange relationship with the organization, i.e. when they feel that they invest more than they receive back in return. This assertion is supported by research on organizational fairness that shows that perceived unfairness amongst employees may lead among other things, to poor organizational commitment (Lind and Tyler 1988, Rutte and Messick 1995). Accordingly, in the present study the authors expect to find a positive relationship between the employee's perceived lack of reciprocity with the organization and poor organizational commitment (*Hypothesis 3*).

1.4 Sample and hypothetical model

The present study involves student nurses. There are three reasons for choosing this particular occupational group. First, student nurses are particularly susceptible to the development of 'early career burnout' (Cherniss 1980) because, as newcomers in the field, they have high expectations about working with patients in a hospital environment. Indeed, they show higher levels of emotional exhaustion and depersonalization compared with senior nurses (Haack 1988). Second, student nurses have not yet 'invested too much to quit'. That is, they have just begun their occupational careers, and other employment opportunities are still open to them. This is illustrated by the fact that in the Netherlands, turnover rates among student nurses are relatively high, ranging from 15 to 25% (Knol and de Voogd 1990). Third, the psychological contract of student nurses with the hospital is particularly salient, since in effect they have a dual psychological contract. They are employed *and* formally trained at the hospital; they are both the employee and the student.

Figure 1 depicts the three hypotheses that constitute the authors' tentative dual-level

social exchange model of burnout. It is expected that burnout is associated with lack of reciprocity that results from two social exchange relationships; with patients and with the hospital, respectively. In addition, organizational commitment is expected to be associated only with lack of reciprocity at the level of the organization. In order to be able to test the alternative hypothesis that poor organizational commitment is associated with the nurses' lack of reciprocity at patient level, the corresponding path is included in the model as well. All hypotheses are simultaneously tested by employing a linear structural modelling approach.

2. Method

2.1 Subjects

Two independent random samples were used in this study. *Sample 1* consisted of 220 student nurses (response rate 68%) who had a mean age of 23.77 years ($SD = 5.36$ years); 82% ($n = 172$) were female and 18% ($n = 38$) were male. *Sample 2* consisted of 142 student nurses (response rate 85%). Their mean age was 26.89 years ($SD = 5.47$ years); 68% ($n = 96$) were female and 32% ($n = 45$) were male. All nurses were enrolled in a three-year in-service training programme at one of five participating hospitals.

2.2 Measures

Lack of reciprocity at patient level was measured by two separate items: (1) 'I spend much time and consideration with my patients, but they give me little appreciation back in return', and (2) 'I invest more in the relationship with patients than I receive back in return from them'. A five-point scale was used: 'I strongly disagree' (1 point), 'I slightly disagree' (2 points), 'I neither agree, nor disagree' (3 points), 'I slightly agree' (4 points), and 'I strongly agree' (5 points).

Lack of reciprocity at organizational level was measured by two separate items that pertain to the nurses' relationship with the hospital as a working environment and a training environment, respectively: (1) 'I benefit little from the efforts I put in the organization' and (2) 'If I take into account my dedication, the organization ought to give me a better practical training'. A similar five-point scale was used to that described previously.

Burnout was measured with the Dutch version of the Maslach Burnout Inventory (MBI-NL) (Maslach and Jackson 1986). In this version two original items (no. 12—'I feel energetic' and no. 16—'Working with people directly puts too much stress on me') were omitted because of their poor factorial validity (Schaufeli and Van Dierendonck 1993, 1994, Byrne 1993). The MBI-NL consists of three sub-scales: Emotional exhaustion (8 items, $\alpha = .84$ and $\alpha = .78$ in samples 1 and 2, respectively), Depersonalization (5 items; $\alpha = .59$ and $\alpha = .57$ in samples 1 and 2, respectively) and Personal accomplishment (7 items; $\alpha = .74$ in both samples). The items are scored on a seven-point rating scale, ranging from 'never' (0 points) to 'every day' (6 points). High levels of emotional exhaustion and depersonalization, and low levels of personal accomplishment are indicative of burnout.

Poor organizational commitment was measured by a selection of items of the Organizational Commitment Questionnaire (OCQ, Mowday *et al.* 1979). Unfortunately, a different version of the OCQ was used in each of the two samples, so that only the three overlapping items could be used in the present study: (1) 'I do not talk up this organization to my friends as a great organization to work for', (2) 'I am proud to tell others that I am part of this organization' (reversed), and (3) 'Deciding to work for this organization was a definite mistake on my part'. A five-point scale was used: 'I strongly disagree' (1 point), 'I slightly disagree' (2 points), 'I neither agree, nor disagree' (3 points), 'I slightly agree' (4 points), and 'I strongly agree' (5 points).

2.3 Analysis

Linear structural analyses were employed using LISREL VII with maximum likelihood estimation to assess the fit of the proposed hypothetical model to the data (Jöreskog and Sorbom 1989). Essentially, the LISREL method uses the covariances (or correlations) among the observed variables to estimate the parameters in the underlying hypothetical model. This a priori theoretical model (figure 1) is assumed to reproduce the observed covariance (or correlation) matrix. Given this particular theoretical model, the LISREL program computes parameter estimates that yield the best fit of the model to the observed matrix. Unfortunately, the fit indices produced by LISREL (i.e. χ^2 goodness-of-fit index; Adjusted Goodness-of-Fit Index—AGFI; Root Mean Square Residual—RMSR) are found to vary with sample size. Therefore, these indices are supplemented by two so-called incremental fit indices: the Normed Fit Index (NFI) and the Non-Normed Fit Index (NNFI) that are barely affected by sample size (McDonald and Marsh 1990). Bentler and Bonett (1980) suggested that incremental fit indices should be at least .90. Models with a lower fit can usually be improved substantially.

The analysis proceeded in three steps. First, the adequacy of the so-called measurement model was evaluated by using the procedure suggested by Anderson and Gerbing (1988). The measurement model specifies how the unobserved latent variables of the hypothetical model (figure 1) are measured in terms of the observed manifest variables that were introduced previously. More specifically, the measurement model estimates the strength of the relationships between the corresponding manifest and latent variables (i.e. factor loadings). In order to be mathematically identified a linear structural model requires at least two observed or manifest variables to estimate each latent variable (Jöreskog and Sorbom 1989). Therefore, the items that measure reciprocity and commitment are used in the model, along with the scores of the three burnout scales. According to Anderson and Gerbing (1988), a test for misspecification in the measurement model is obtained by constructing a pseudo χ^2 -test that uses the χ^2 -value of the full saturated model (i.e. the model in which all parameters relating the four latent variables to one another are estimated) in combination with the degrees of freedom of the null model (i.e. the model in which all parameters of the saturated model are fixed at zero). If this test fails significance in both samples it is unlikely that misspecifications have occurred in the measurement model.

In the second step, the fit of the hypothetical model (figure 1) is assessed independently in both samples using the LISREL VII computer program. Based—among other things—on modification indices, the model is eventually respecified in order to improve its fit.

Finally, in order to cross-validate the respecified model, the invariance of the pattern of path coefficients linking the latent variables is examined across both samples (Jöreskog and Sorbom 1989). More specifically, two models are tested: (1) the model that assumes that the factor loadings of the manifest variables and the path coefficients that link the latent variables are equal across both samples; and (2) the model that allows the path coefficients to load independently across the samples. When both models fit to the data cross-validation is successful i.e. it is unlikely that the path coefficients linking the latent variables of the model differ significantly across both samples.

3. Results

Table 1 shows mean values, standard deviations, and intercorrelations of the variables in samples 1 and 2.

An indication of the level of burnout was obtained by comparing the student nurses'

Table 1 Descriptive statistics and intercorrelations of variables

	Sample 1 (<i>n</i> = 220)		Sample 2 (<i>n</i> = 142)		Variables										
	M	SD	M	SD	1	2	3	4	5	6	7	8	9	10	
1 Emotional exhaustion	15.66	6.48	16.01	5.15											
2 Depersonalization	6.04	3.64	6.49	3.35	.43										
3 Personal accomplishment	27.12	3.90	26.73	3.63	-.30	-.30									
4 Poor organizational commitment, item 1	3.92	.94	3.75	1.03	.18	.19	-.06								
5 Poor organizational commitment, item 2	3.33	.89	3.16	.97	.09	.11	-.14	.34							
6 Poor organizational commitment, item 3	4.27	.84	4.21	.93	.26	.18	-.13	.43	.35						
7 Lack of reciprocity—patients, item 1	2.05	.77	2.37	.81	.16	.31	-.18	.07	.00	.01					
8 Lack of reciprocity—patients, item 2	2.60	.89	2.85	1.00	.19	.15	-.13	.10	.04	.12	.32				
9 Lack of reciprocity—organization, item 1	2.88	.90	3.13	.84	.22	.13	.04	.32	.31	.37	.04	.15			
10 Lack of reciprocity—organization, item 2	2.88	1.05	3.23	1.05	.32	.20	-.04	.22	.17	.17	.04	.16	.19		

Note: Below diagonal: Sample 1, above diagonal: Sample 2. For the content of the items, see text.

Table 2 Goodness-of-fit indices of models

	χ^2	df	<i>p</i>	AGFI	RMSR	NFI	NNFI
Sample 1 (<i>n</i> = 220)							
Hypothetical model	42.92	31	.075	.94	.057	.87	.94
Respecified model	42.97	32	.093	.94	.058	.87	.95
Sample 2 (<i>n</i> = 142)							
Hypothetical model	43.70	31	.065	.90	.074	.81	.90
Respecified model	43.94	32	.078	.90	.077	.81	.91

AGFI = Adjusted goodness-of-fit, RMSR = Root Mean Square Residual; NFI = Normed Fit Index, NNFI = Non-Normed Fit Index

MBI-NL scores with those of 3679 other Dutch human service professionals (e.g. nurses, physicians, correctional officers, hospice staff) who served as a provisional normative sample (Schaufeli and Van Dierendonck 1994). In this rather heterogeneous sample, mean levels of emotional exhaustion, depersonalization, and personal accomplishment were 14.44 (SD = 8.01), 7.90 (SD = 4.36), and 27.31 (SD = 5.20), respectively. Although a MANOVA showed a significant difference in levels of burnout between sample 1, sample 2, and the normative sample ($F(2, 3679) = 8.96, p < .0001$), this was solely due to the lower level of depersonalization among both samples of student nurses ($F(2, 3679) = 12.47, p < .001$). No significant differences were observed for emotional exhaustion ($F(2, 3679) = .55, p = .578$) or personal accomplishment ($F(2, 3679) = .91, p = .402$).

The pseudo χ^2 -test for misspecifications in the measurement model failed to reach significance in both samples (Sample 1: $\chi^2(35) = 139.43, p < .001$; Sample 2: $\chi^2(35) = 90.43, p < .001$). It is therefore unlikely that misspecifications in the measurement model had occurred. Hence, the authors could proceed to testing the hypothetical model.

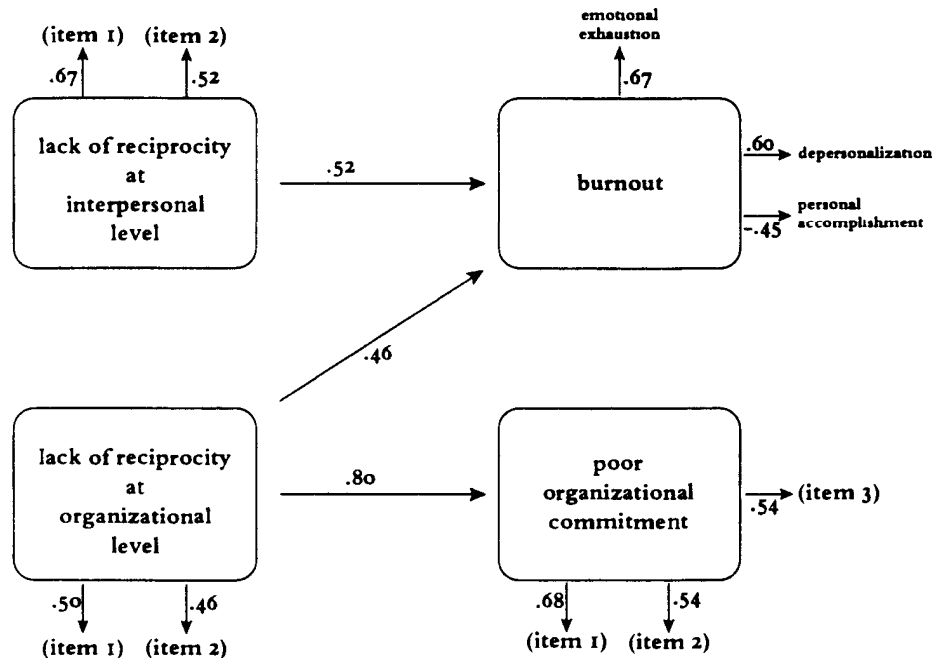


Figure 2 The respecified model (standardized solution) showing β regression weights. Note: For the content of the items, see text

The fit of the hypothetical model (figure 1) was tested and found to be nonsignificant in both samples (table 2), indicating that the hypothetical model fits reasonably well to the data. As expected, the path running from lack of reciprocity at the organizational level to burnout proved to be nonsignificant in both samples. Therefore, in the next step this relationship was constrained at zero. This respecification did not significantly reduce the fit of the model in both samples ($\Delta\chi^2(1) = .05, p = .82$ and $\Delta\chi^2(1) = .24, p = .62$, respectively). Although, contrary to the NNFI, the NFI did not exceed .90, the LISREL output suggested that no paths were nonsignificant in both studies, nor were there similar modification indices suggested that could improve the fit. Therefore, no more model respecifications were considered.

Cross-validation revealed that the model that assumed the factor loadings of the manifest variables and the path coefficients that link the latent variables to be equal across both samples resulted in a $\chi^2(87)$ of 100.33 ($p = .16$). This indicated a good fit to the data. When the path coefficients of the model were allowed to load independently across the samples a comparable fit was obtained ($\chi^2(84) = 99.12, p = .12$). Accordingly, it is quite unlikely that the path coefficients linking the latent variables differed significantly across both samples ($\Delta\chi^2(3) = 1.21, p = .75$). So, the cross-validation procedure proved to be successful: the respecified model held equally well in both samples. Figure 2 shows the standardized solution (β regression weights) of the respecified model that assumes that the factor loadings of the manifest variables and the path coefficients that link the latent variables are equal across both samples.

4. Conclusion and discussion

As hypothesized by the dual-level social exchange model, burnout is associated with social exchange relationships at the interpersonal level (Hypothesis 1) as well as at the organizational level (Hypothesis 2). More specifically, student nurses who feel that they invest more in their patients and in their hospital than they receive back in return are likely to report more symptoms of emotional exhaustion, depersonalization, and reduced personal accomplishment. Moreover, and as expected, poor organizational commitment turns out to be significantly positively related to lack of reciprocity at the organizational level (Hypothesis 3), but *not* to lack of reciprocity at the interpersonal level (alternative hypothesis). This means that student nurses who feel that they invest more in their hospital than that they receive back in return from that organization have poor organizational commitment. Organizational commitment is not affected by the nurses' interpersonal exchange relationships with their patients. The results obtained with the dual-level exchange model are fairly robust since they were observed and cross-validated in two independent samples.

4.1 Practical implications

The dual-exchange model suggests that a combination of individual and workplace interventions is most effective in reducing burnout and enhancing commitment. This follows from the authors' findings that a distinction should be made between lack of reciprocity at the organizational and at the individual level of exchange.

In order to reduce burnout and simultaneously enhance commitment, the social exchange relationship at the organizational level should be improved. In discussing organizational healthiness in relation to stress and burnout, Cox *et al.* (1993), distinguished three psychosocial subsystems or environments of an organization: the problem-solving environment, the task-environment, and the developmental environment. Their study among teachers showed that burnout was particularly associated with poor problem-

solving and task environments. This suggests that organizations should particularly invest in these psychosocial subsystems in order to improve their employees' outcomes so that burnout is counteracted and commitment is enhanced.

The organizational approach should be supplemented by an individually based strategy that is aimed at teaching the caregiver how to improve the exchange relationship with his or her recipients. This can be done, for instance, by introducing the notion of an 'energy equilibrium' that allows the nurses to analyse what gives them energy in their work with patients, and what is energy consuming. Community nurses who participated in a workshop that used this approach showed significantly less symptoms of emotional exhaustion, psychological strain, and self-reported somatic complaints at the one-month follow-up compared to the pre-test (Schaufeli 1995).

4.2 Limitations

Despite the overall positive results, the study shows three limitations. First, in spite of a linear modelling approach no causal inferences can be made since the research design is cross-sectional in nature. Therefore, it cannot be ruled out that lack of reciprocity is an accompanying symptom of burnout or poor organizational commitment, instead of being its antecedent. Even reverse causation cannot be ruled out: burnout or poor organizational commitment may lead to a lack of reciprocity instead of vice versa. However, a *post-hoc* check of such alternative causal links between both levels of reciprocity and both dependent variables revealed that no other model fits significantly better to the data of both samples than the respecified hypothetical model depicted in figure 2. Nevertheless, only future prospective longitudinal research can disentangle causal relationships between antecedents (i.e. lack of reciprocity) and consequences (i.e. burnout and commitment). A fruitful approach was followed by Van Yperen and Buunk (1990), whose cross-lagged analysis showed that inequity in intimate relationships produces marital dissatisfaction instead of vice versa.

Second, since in each sample slightly different scales were used to assess organizational commitment the authors were forced to include the three overlapping items. Therefore, in future research on the dual-level exchange model more valid scales should be used such as the full Organizational Commitment Questionnaire (Mowday *et al.* 1979). In addition, the way in which lack of reciprocity at both levels has been operationalized could be improved as well, for instance by including the specific investments and outcomes.

Third, no indications of 'early career' burnout were observed in the student nurse samples. In fact, levels of burnout were comparable to those in the provisional Dutch normative sample, with the level of depersonalization even lower in both samples under study. Obviously, the student nurses had not (yet) developed negative, callous or cynical attitudes towards their patients. Probably their enthusiasm, engagement and empathic concern prevented them from developing such feelings. This speculation is supported by spontaneous indignant comments that some nurses wrote in the margin of some depersonalization items (e.g. 'I do care!'). Although, generally speaking, the depersonalization scale of the MBI is the least reliable subscale (Schaufeli *et al.* 1993), Cronbach α 's in these samples are particularly low. This is yet another indication that the depersonalization dimension of burnout is not conspicuous among student nurses.

4.3 Directions for future research

In addition to the use of longitudinal designs and improved operationalization of some measures, three other directions for future research seem to be important. First, it is quite

likely that lack of reciprocity has different effects on different individuals. For instance, Van Yperen *et al.* (1992) examined the role of communal orientation, a concept that refers to the design to give benefits in response to the needs of and out of concern for others and to help when they are distressed. It was shown that for nurses high in communal orientation, lack of reciprocity hardly mattered, but for nurses low in communal orientation, such lack of reciprocity was clearly related to burnout. Obviously, personality characteristics moderate the relationship between lack of reciprocity and burnout. Therefore, such variables should be included in future research.

Second, organizational commitment is a rather complex concept. Here operationalization was inspired by a moral and affective interpretation of commitment (cf. Mowday *et al.* 1979). Although this interpretation is widely used, it is not the only one as was illustrated by the calculative approach to commitment of Etzioni (1961) that has been mentioned before. In addition, continuance commitment and normative commitment are distinguished (Allen and Meyer 1990). Accordingly, another way of substantiating the dual-level model is to differentiate between various kinds of organizational commitment.

Third, interpersonal relationships with colleagues and supervisors are quite important, not only for performing well on the job, but also to prevent burnout (cf. Schaufeli and Buunk 1996) and to improve organizational commitment (cf. Mathieu and Zajac 1990). Buunk and Hoorens (1992) argued that such social relationships among colleagues and superiors at work can be interpreted in terms of social exchange relationships. For instance, there is some evidence that employees keep 'support bookkeeping' that is based on the balance between giving and receiving support from others. Following this line of reasoning, the dual-level exchange model can be enlarged by another level of social exchange: the interpersonal relationship of the employee with his or her colleagues/supervisor.

Fourth, in the present study burnout was used as a unitary construct. However, it becomes increasingly clear that the three dimensions of burnout show a differential pattern of relationships with other variables. Generally speaking, emotional exhaustion and depersonalization are influenced by work demands, while the presence or absence of resources influences personal accomplishment (cf. Cordes and Dougherty 1993). More particularly, according to the developmental model proposed by Leiter (1993), emotional exhaustion arises first as a response to a demanding work environment that is, for instance, characterized by a lack of reciprocity at various levels. Increased exhaustion in turn brings about depersonalization as caregivers attempt to gain emotional distance from their recipients by way of coping (i.e. by lowering their investments). Reduced personal accomplishment develops relatively independently from the other burnout dimensions, mainly as a function of lack of resources such as poor autonomy and poor social support. Accordingly, future research should study more complex longitudinal models of burnout that differentiate between various dimensions. The proposed dual-level social exchange model can serve as a starting point for such an endeavour.

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