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The Effects of Early Career Burnout on Long-Term Sickness Absenteeism

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Contents

1 Abstract

Severe stress is regarded as one of the most common reasons for long-term sickness absenteeism (LTSA) in Sweden. Burnout is viewed as a response to chronic exposure to stress and is assumed to increase the risk of LTSA. The results of previous studies investigating the association between burnout and LTSA are mixed and are based primarily on cross-sectional studies. The purpose of this study was to longitudinally examine the effect of the development of the burnout dimensions exhaustion and disengagement on prospective LTSA. The sample consisted of 1929 beginning teachers who were surveyed annually during their first three years of employment. Data were analyzed using latent growth modeling. Sex, age, sickness absence history, and study burnout were included as control variables. The results showed that both exhaustion and disengagement increased over time and that both dimensions were associated with an increased risk of LTSA. The results also showed that the burnout process started during teacher education and that study burnout was associated with an increased risk of LTSA. After adjusting for study burnout, only change in disengagement was associated with an increased risk of LTSA, $OR = 8.81$, $p < .05$. The results also showed that a combination of concurrent exhaustion and disengagement was associated with the greatest risk of LTSA. These findings provide new insights into the relationship between burnout and LTSA, and highlight the need for longitudinal studies when attempting to make causal inferences about the effects of burnout and demonstrate the health impairing effect of burnout.

2 Introduction

2.1 Definition of burnout

Sickness absenteeism is a problem for individuals, organizations, and society as a whole (e.g., Busch, Bodin, Bergström, & Jensen, 2011; Harrison & Martocchio, 1998; Kuoppala, Lamminpää, & Husman, 2008). One of the two most common reasons for long-term sickness absenteeism (LTSA) in Sweden is a negative reaction to severe stress (e.g., burnout) (The Swedish Social Insurance Agency, 2011). Burnout is assumed to develop as a response to chronic exposure to stressors at work. Burnout was originally defined as a work-related state characterized by the dimensions of exhaustion, cynicism, and reduced personal efficacy (Maslach, Schaufeli, & Leiter, 2001). Due to weak empirical support for the reduced personal efficacy dimension (e.g., Lee & Ashforth, 1996), there has emerged a definition of a core of burnout consisting of just the two dimensions of exhaustion and cynicism. Based on this core definition of burnout, an alternative view of burnout has been presented where burnout is defined as a work-related state characterized by exhaustion (intense physical, emotional, and cognitive strain) and disengagement (distancing oneself from work and developing negative attitudes towards work) (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001).

2.2 Burnout and LTSA (long term sickness absenteeism)

It has been found that burnout has a health impairing effect and it is assumed that burnout will increase the risk of sickness absenteeism (e.g., Maslach et al., 2001; Melamed, Shirom, Toker, Berliner, & Shapira, 2006; Shirom, 2003). There are several studies demonstrating that burnout is associated with an increased risk of sickness absenteeism, but the effect of burnout is generally quite small (e.g., Ahola et al., 2008; Anagnostopoulos & Niakas, 2010; Borritz, Rugulies, Christensen, Villadsen, & Kristensen, 2006; Darr & Johns, 2008; Duijts, Kant, Swaen, van den Brandt, & Zeegers, 2007; Peterson et al., 2011; Schaufeli, Bakker, & Van Rhenen, 2009; Schaufeli & Enzmann, 1998; Toppinen-Tanner, Ojajärvi, Väänaänen, Kalimo, & Jäppinen, 2005). One limitation to these previous studies, however, is that the results are generally based on cross-sectional burnout data when estimating its effect on sickness absenteeism. Although there are studies that have used a prospective study design (e.g., Peterson et al., 2011; Toppinen-Tanner et al., 2005), these studies have only used burnout data from one time point to predict absenteeism at a future time point. Thus, these studies do not take into account the effect of the development of burnout over time when predicting absenteeism. Only one study was found that included the effect of change in burnout over time, and this study found that an increase in burnout was associated with an increased risk of sickness absenteeism (Borritz et al., 2006). However, the burnout measure used in that study, the Copenhagen Burnout Inventory (Kristensen, Borritz, Villadsen, & Christensen, 2005), is not commonly used and has received criticism (Schaufeli & Taris, 2005). This limits the possibility to compare their findings with other studies. Moreover, although the longitudinal design of the study was a strength, the results were based on data from only two waves of measurement. The use of data from only two waves is associated with the risk that true change is confounded with measurement error, and current recommendations advocate the use of at least three waves of measurement when studying change over time (Singer & Willett, 2003).

2.3 Aim

It is apparent that there is a need for more longitudinal research into the effect of burnout on sickness absenteeism. The aim of the present study was, therefore, to further investigate the effect of burnout on sickness absenteeism using a longitudinal study design that utilized data from three waves of measurement. More specifically, the purpose of the study was to investigate the effect of initial levels of exhaustion and disengagement, and the change over time in exhaustion and disengagement, on prospective LTSA.

2.4 Hypothesis

Based on previous studies of the relationship between burnout and absenteeism (e.g., Borritz et al., 2006; Darr & Johns, 2008; Toppinen-Tanner et al., 2005), it was hypothesized that (I) higher initial levels of exhaustion and disengagement would be associated with an increased risk of prospective LTSA, and (II) the increase in these two dimensions over time would be associated with an increased risk of prospective LTSA. Furthermore, it was also of interest to examine if the addition of change over time in the burnout dimensions when predicting LTSA yielded different results compared to previous research into this topic. The data was therefore also analyzed in the same way as in previous prospective studies on the effect of burnout on sickness absenteeism, i.e., using a burnout assessment from a previous time point to predict sickness absenteeism assessed at a future time point.

3 Method

3.1 Sample and procedure

The data used in the present study originated from a study called the Prospective Analysis of Teachers' Health (PATH) (Gustavsson, Kronberg, Hultell, & Berg, 2007). The PATH study used a longitudinal study design and data were collected on new teachers during their final two years of higher education and their first three years of employment. Initially, 4067 student teachers from 21 different universities in Sweden were contacted, and 2809 (69.1%) gave informed consent to participate. This group of 2809 student teachers constituted the cohort of the study. Data were collected using postal questionnaires and five data collections were performed. The response rates for the data collections varied between 77.8% and 57.5%. Criteria for inclusion in the present study were that the teachers had participated in at least one of the three PATH data collections during employment (labeled T1, T2, and T3) and had responded to at least 60% of the burnout items in the questionnaire. A total of 1929 participants met the criteria for inclusion and constituted the study sample. The sample was 85.8% women and the mean age was 31.55 years (*SD* = 7.15).

3.2 Measurements

3.2.1 Oldenburg Burnout Inventory

Burnout was measured with the Oldenburg Burnout Inventory (OLBI) (Demerouti et al., 2001). The OLBI consists of two subscales that assess the two core burnout dimensions of exhaustion and disengagement. Each subscale consists of eight items, of which four items are positively worded and four are negatively worded.

3.2.1.1 Choice of items

Although the use of reversed worded items may be recommended to reduce acquiescence bias and response sets, it has been found that reversed items can be problematic. Studies have shown that respondents may calibrate reversed worded items differently (Bode, 2004), and when evaluating the dimensionality of measures of psychological symptoms that include both positively and negatively worded items there is a risk that these items do not measure the same construct (Betemps & Baker, 2004; Conrad et al., 2004). Furthermore, there is reason to believe that the absence of psychological symptoms does not necessarily indicate psychological well-being (Keyes, 2003; World Health Organization, 1946). This topic has been discussed in the burnout literature (Maslach et al., 2001), and empirical studies have demonstrated that burnout and its suggested opposite pole, work engagement, appear to be qualitatively different, but negatively correlated, phenomena (Demerouti, Mostert, & Bakker, 2010; Schaufeli, Salanova, González-romá, & Bakker, 2002). It has also been suggested that the negatively worded items of the OLBI can be used to assess work engagement (Bakker, Schaufeli, Leiter, &

Taris, 2008). Consequently, only the positively worded items of the OLBI were used to assess exhaustion and disengagement.

3.2.1.2 Cutoff values

The items were rated using a four-point frequency response format (1 = *Not at all*, 2 = *Some of the time*, 3 = *Most of the time*, 4 = *All of the time*). The means of the two sub-scales were used when analyzing the data. However, at the first wave (T1) one exhaustion item was missing from the questionnaire. To examine the effect of the missing item, the three-item version and the four-item versions of the instrument were correlated at T2 and T3. The results showed that the correlation was .975 at T2 and .976 at T3. According to previously recommended cutoff scores for average values of the OLBI, exhaustion levels ≥ 2.25 and disengagement levels ≥ 2.10 are considered to be high (Peterson, Demerouti, Bergström, Åsberg, & Nygren, 2008). These cutoff scores were used in this to estimate the prevalence and cumulative incidence of symptoms of high burnout levels.

3.2.2 Assessment of LTSA

LTSA was assessed during the final data collection (T3) using a single item. The participants were asked for how many days their longest consecutive period of sickness absenteeism had lasted during the previous 12 months (response alternatives: 1 = *1–7 days*, 2 = *8–14 days*, 3 = *15–29 days*, 4 = *30–59 days*, 5 = *60–89 days*, and 6 = *90–365 days*). Participants with a period exceeding 14 days were categorized as having LTSA, and those with a shorter period were categorized as not having LTSA. The period of >14 days was chosen because this is the period after which employees' right to sick pay is decided by the Swedish Social Insurance Agency and requires personal contact with the Swedish Social Insurance Agency. For periods shorter than 15 days the employees receive sick pay from their employers.

3.2.3 Control variables

Control variables were sex, age, number of sickness absence events at T1, length of most recent sickness absence period at T1, and exhaustion and disengagement during the final year of education. Number of sickness absence events at T1 was assessed using a single item (response alternatives: 1 = *0 events*, 2 = *1-2 events*, 3 = *3-4 events*, and 4 = *>5 events*). Length of most recent period at T1 was also assessed using a single item (response alternatives: 1 = *0 days*, 2 = *1 day*, 3 = *2-3 days*, and 4 = *>3 days*). These two assessments were used to control for the effect of previous levels of sickness absenteeism. Exhaustion and disengagement during education were assessed using the positively worded items of the student version of the OLBI (Rudman & Gustavsson, 2012). Each burnout dimension were assessed using four items, the items were rated using a four-point Likert response format (1 = *Strongly disagree,* 2 = *Somewhat disagree,* 3 = *Somewhat agree,* 4 = *Strongly agree*). The inclusion of the assessment of study burnout was to make it possible to determine the effect of burnout on LTSA that was not attributable to education. Descriptive statistics and reliability estimates of the study variables are presented in Table 1.

Table 1 Stability coefficients (Pearson's *r*), descriptive statistics, and reliability estimates of the study variables. Stability coefficients were estimated using full information maximum likelihood. All correlations were statistically significant (p < .001).

Variable	T1 *r*	T2 *r*	*N*	*N* items	Range	*M* (*SD*)	α
T1 Exhaustion	–	–	1485	3	1–4	2.318 (0.74)	.74
T2 Exhaustion	.55	–	1504	4	1–4	2.305 (0.72)	.83
T3 Exhaustion	.53	.66	1266	4	1–4	2.34 (0.73)	.83
T1 Disengagement	–	–	1484	4	1–4	1.74 (0.65)	.81
T2 Disengagement	.57	–	1503	4	1–4	1.75 (0.62)	.83
T3 Disengagement	.50	.59	1266	4	1–4	1.82 (0.65)	.82
Sickness absence events T1	-	-	1481	1	1-4	1.09	-
Sickness absence duration T1	-	-	1482	1	1-4	1.30	-
Exhaustion education	-	-	1885	4	1-4	2.56 (0.71)	.79
Disengagement education	-	-	1885	4	1-4	2.25 (0.71)	.77
T3 LTSA T3 (1 = Yes)	-	-	1081	1	0–1	.074	-

r = Pearson's correlation coefficient; *M* = mean, *SD* = standard deviation, α = Cronbach's alpha

3.3 Data analysis

Data were analyzed using latent growth modeling, which is a method that allows for the examination of both intra-individual (within person) change over time and inter-individual (between person) variability in the intra-individual changes (Preacher, 2008). A latent growth model includes an intercept and a slope. The intercept represents the value of the outcome variable at the first measurement, and the slope represents the rate of change over the time period of interest. Because there were only data available from three data collections, this only allowed for examination of linear development over time. The intercept and the slope were regressed on the burnout assessment at each of the three waves. In all latent growth models, the variance of the intercept and the slope were estimated to test for individual differences regarding the initial levels of burnout and their change trajectories. The covariance between the intercept and the slope was also estimated in all models.

3.3.1.1 Procedure

The analysis followed the same procedure for both exhaustion and disengagement. In the first step, changes over time in the respective burnout dimensions were examined. In the second step, LTSA was added to the model and was regressed on the intercept and the slope of the respective growth model of exhaustion and disengagement. In the third step, covariates were added to the model to control for the effect of sex, age, levels of sickness absenteeism at the first year of employment and exhaustion or disengagement during the final year of education. To get comparable estimates of the effect of time on exhaustion and disengagement and the effect of the intercept and the slope on future LTSA, *Z*-scores were calculated and calibrated in relation to the model-estimated means and standard deviations during the first year of employment for both exhaustion and disengagement.

3.3.1.2 The estimation model

After having examined the exhaustion and disengagement assessments in regards to normality, it was found that the variables deviated from normality and thus the Yuan-Bentler correction for non-normality (Yuan & Bentler, 2000) was applied using a full information maximum likelihood (FIML) estimation with robust standard errors (labeled as MLR in Mplus). Latent growth modeling is a structural equation modeling approach and model fit was evaluated using the χ^2 and the three additional fit indices: the root mean-square error approximation of the mean (RMSEA), the standardized root mean-square residual (SRMR), and the comparative fit index (CFI). The additional fit indices were chosen based on their sensitivities to model misspecification and sample size (Hu & Bentler, 1998). Models with a RMSEA value close to or lower than .06, a SRMR value close to or lower than .08, and a CFI value close to or higher than .95 were considered to have good model fit (Hu & Bentler, 1999). However, because logistic regression was used to analyze the effect of exhaustion and disengagement on LTSA, traditional fit indices were not available for these analyses. The effects of exhaustion and disengagement on LTSA are expressed as odds ratios (OR).

3.3.1.3 Missing cases

Of the 1929 teachers in the study sample, 888 participated in all waves of measurement and had responded to the burnout items in each wave. Participants with complete data were compared to non-completers in regards to gender, age, parenthood (i.e., becoming a parent during the period of employment), and levels of exhaustion and disengagement at T1. The magnitude of the associations between the predictors and missingness (i.e., the effect sizes) is given in the correlation metric and was estimated by tetrachoric or polyserial correlations. Missingness was negatively related to age (r = -.169, $p \leq$ .001), and positively related to parenthood (r = .082, p = .040), exhaustion (r = .075, p = .016), and disengagement (r = .125, $p \leq$ .001). In other words, participants who were younger, had become a parent, had high levels of exhaustion, or had high levels of disengagement were less likely to participate in all waves of measurement.

3.3.1.4 Correction for missing data

Current recommendations for an inclusive analysis strategy (i.e., not using list-wise deletion) advocate the use of FIML methods of estimation that can include missing data. Using FIML as the estimation method means that it is not necessary for the respondents to have participated in all waves of measurement. To correct for systematic bias, the significant predictors of incomplete data not included in the analysis (i.e., age, parenthood, exhaustion at T1, and disengagement at T1) were included as auxiliary variables in the analyses. This is in line with current recommendations of an inclusive analysis strategy of including auxiliary variables in the missing data handling procedure. This makes the assumption that the data is missing at random more plausible and can improve the power of the analysis (Collins, Schafer, & Kam, 2001). However, it is not possible to include auxiliary variables when an outcome variable is categorical, as is the case for LTSA. This means that the auxiliary variables were only included when estimating change in exhaustion and disengagement but not in the second step of the analysis when predicting LTSA. The third step of the analysis involved the addition of covariates to the model to control for the effects of sex, age, sickness absence events at T1, duration of sickness absence period at T1, and exhaustion or disengagement during the final year of education on LTSA. When adding covariates to the model as independent variables, it is required that the participants have complete data on the independent variables resulting in a reduction in sample size from 1929 to 1114. Given the obvious risk of biasing the results it was decided to impute the missing burnout data using multiple imputation (MI). To affect the results as little as possible data were only imputed for the control variables. In line with current recommendations for MI (Graham, 2009; Graham, Olchowski, & Gilreath, 2007), 100 new data sets were generated. The results presented are the pooled estimates of the results for each dataset.

3.3.1.5 The use of logistic regression

The final question concerned whether the addition of the effect change over time in burnout on LTSA yielded different results compared to previous research into the effect of burnout on sickness absenteeism in which this effect was not included. Three logistic regression analyses were performed to address this issue in which LTSA at T3 was regressed on exhaustion and disengagement at T1, T2, and T3. Sex, age, sickness absence events at T1 and duration of sickness absence period at T1 were included as control variables in each analysis. However, because of the complete data in dependent variables this resulted in a reduction in sample size from 1929 to 704 at T1, 674 at T2, and 682 at T3. The missing data were therefore imputed using MI. To correct for systematic bias, parenthood, being a predictor of incomplete burnout data that were not included in the imputation process, were included as an auxiliary variable in the imputation. Again, 100 new data sets were generated and the results presented are the pooled estimates of the results for each dataset.

3.3.1.6 Analytical software

Descriptive statistics and reliability estimates were produced using SPSS 21.0 (SPSS Inc, 2012). All additional analyses were performed using the Mplus 7.11 software package (Muthen & Muthen, 2010).

4 Results

The results of the analyses showed that both exhaustion and disengagement increased over time, and the developmental patterns of the two burnout dimensions predicted prospective LTSA. The estimated mean levels of exhaustion ranged from 2.311 to 2.352 at the three waves of measurement and increased significantly over time (β_{slope} = .028, p = .044). The variances showed that there were individual differences in regards to initial levels ($s^2_{intercept}$ = .556, p < .001) and rate of change (s^2_{slope} = .064, p = .007) of exhaustion, but there was no significant correlation between the initial levels and rate of change (r = -.108, p = .382). Disengagement increased over time (β_{slope} = .080, p < .001) and the estimated mean levels ranged between 1.731 and 1.835. There were individual differences in regards to initial levels ($s^2_{intercept}$ = .618, p < .001) and rate of change (s^2_{slope} = .076, p = .010), and there was a significant correlation between initial levels and rate of change (r = -.321, p = .002). The correlation indicates a developmental pattern where individuals with higher initial levels of disengagement had a more gradual increase over time. Conversely, participants with low initial levels displayed the opposite developmental pattern. Fit statistics of the latent growth models indicated good model fit (Table 2) and the standardized trajectories of exhaustion and disengagement are plotted in Figure 1. Stability coefficients were generally quite high for both exhaustion and disengagement and were somewhat higher for exhaustion (Table 1).

Table 2
Fit statistics of the latent growth models.

Variable	$\chi^2(df)$	p	SRMR	RMSEA (90% CI)	CFI
Exhaustion	2.60 (1)	.11	.01	.03 (< .01–.07)	.99
Disengagement	4.69 (1)	.03	.01	.04 (.01–.09)	.99

df = degrees of freedom, *p* = probability value, SRMR = Standardized Root Mean-square Residual; RMSEA = Root Mean-Square Error Approximation of the mean; CI = Confidence Interval; CFI = Comparative Fit Index.

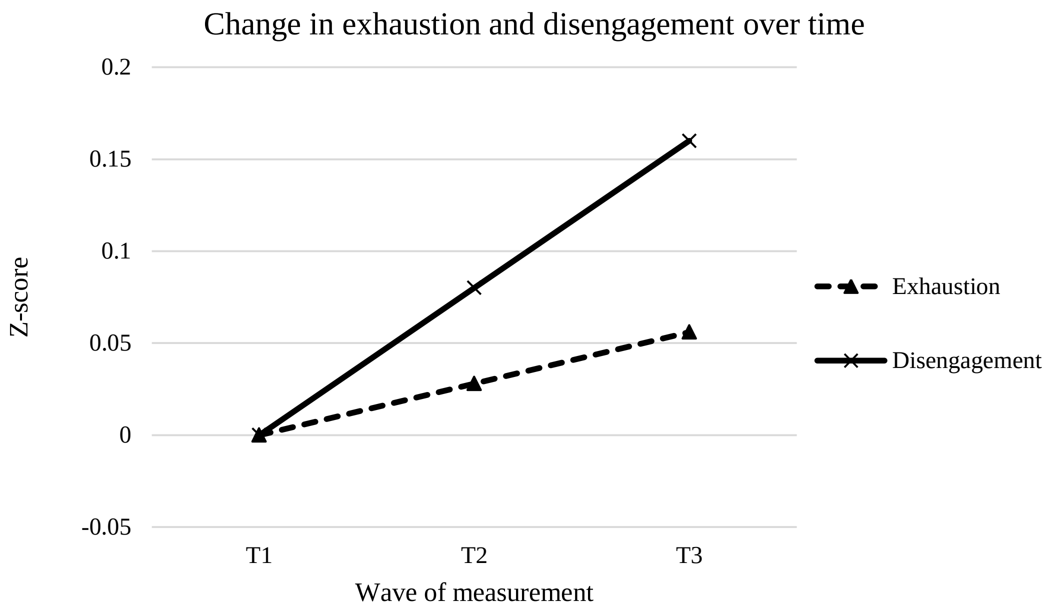

Figure 1
Standardized change trajectories of exhaustion and disengagement.

Both the initial level and the rate of change in exhaustion were associated with an increased risk of LTSA (Table 3, Model 1a). However, after adding the control variables, all explained variance in LTSA was accounted for by exhaustion during the final year of education and the adjusted effects of initial levels and change over time in exhaustion were non-significant (Table 3, Model 1b). Both the initial level and the rate of change of disengagement increased the risk of LTSA (Table 3, Model 2a). After adding the control variables to the model there was only a significant effect change over time in disengagement on LTSA. The variance that was previously explained by initial levels of disengagement was now accounted for by levels of disengagement during education (Table 3, Model 2b). There was no significant effect of the control variables besides burnout levels during education.

Table 3 Associated odds ratios of predictors of LTSA. Model 1a and 2a only includes the intercept and the slope of respective growth model. In Model 1b and 2b control variables have been added.

	Exhaustion		Disengagement	
Predictor	Model 1a	Model 1b[a]	Model 2a	Model 2b[a]
Intercept	1.92**	1.41	1.57**	1.23
Slope	8.52*	8.01	9.07*	8.81*
Sex	-	1.14	-	1.46
Age	-	1.01	-	1.02
Sickness absence events T1	-	1.12	-	1.21
Sickness absence duration T1	-	1.05	-	1.04
Exhaustion education	-	1.49*	-	-
Disengagement education	-	-	-	1.51**

[a] Pooled estimates based on 100 imputed data sets; * $p < .05$; ** $p < .01$.

The cross-sectional prevalence of the symptoms of high burnout (i.e., concurrent high levels of exhaustion and disengagement) ranged from 19.6% to 23.5%, and the cumulative incidence was 38.9% (Table 4). There were 47.0% of the respondents that had reported LTSA that also had experienced symptoms of high burnout levels at some time during their first three years of employment. In addition, 83.0% of those who reported LTSA suffered from exhaustion at some point during their first three years of employment, and 53.0% suffered from disengagement, whereas 61.0% had at some point been symptom free. Logistic regression analyses of the bivariate effects of each incidence category showed that the incidence of burnout, exhaustion, and disengagement were all associated with an increased risk of LTSA, and symptom free was associated with a decreased risk (Table 4). These analyses do not, however, take into account overlapping symptoms between the categories (i.e., that a person could have experienced symptoms of exhaustion, disengagement, and burnout concurrently during the three-year period).

Table 4
Prevalence and cumulative incidence of symptoms of high burnout levels, odds ratios of the bivariate effects of cumulative incidence of respective category on LTSA. Results presented are the pooled estimates based on 100 imputed data sets.

Variable	T1	T2	T3	Across all waves	Cumulative incidence	*OR*	*p*
Symptom free	47.3%	45.4%	46.2%	23.8%	68.8%	0.48	< .01
Exhaustion	51.3%	53.3%	52.2%	29.8%	74.7%	2.34	.02
Disengagement	21.0%	22.0%	25.2%	6.9%	47.4%	1.64	.03
Burnout[a]	19.6%	20.6%	23.5%	6.5%	38.9%	1.63	.03

[a] Concurrently high symptoms of exhaustion and disengagement. *OR* = odds ratios.

The sample was divided into the following five groups: (1) those who had remained symptom free (23.9%), (2) those who had experienced symptoms of burnout (38.9%), (3) those who had only experienced symptoms of exhaustion (34.7%), (4) those who had only experienced symptoms of disengagement (1.4%), and (5) those who had experienced symptoms of both exhaustion and disengagement but not concurrently (1.0 %). Four dummy variables were generated based on the five groups using the symptom free group as reference category. A logistic regression analysis was then carried out and LTSA was regressed on the dummy variables. The results showed that there was an increased risk of LTSA for those who experienced high burnout symptoms at some point during the period, OR = 2.88, p = .01, and a decreased risk of LTSA for those who remained symptom free, OR = .03, p < .001. There were no significant effects on LTSA of experiencing only exhaustion, OR = 2.23, p = .06, only disengagement, OR = 1.84, p = .56, or both exhaustion and disengagement but not concurrently, OR = 2.77, p = .33.

The final research question concerned whether analyzing the data in the same way as in previous studies on the association between burnout and sickness absenteeism would have yielded different results. Three logistic regression analyses were performed in which LTSA at T3 was regressed on exhaustion and disengagement at T1, T2, and T3. Sex, age, exhaustion and disengagement during education, and sickness absenteeism during the first year of employment were included as control variables in all analyses. There were no significant effects of exhaustion (*OR* = 1.335, p = .218) or disengagement (*OR* = 1.001, p = .997) at T1. High levels of exhaustion were associated with an increased risk of LTSA at both T2 (*OR* = 2.515, $p < .001$) and T3 (*OR* = 1.868, p = .020). The effects of disengagement, however, remained non-significant at T2 (*OR* = 0.642, p = .066) and T3 (*OR* = 1.203, p = .508).

Table 5 Associated odds ratios for predictors of LTSA when not accounting for change over time. Results presented are the pooled estimates based on 100 imputed data sets.

Predictor	Model 1	Model 2	Model 3
Sex	1.22	1.11	1.22
Age	1.00	1.00	1.01
Sickness absence events T1	1.18	1.17	1.12
Sickness absence duration T1	1.15	1.14	1.17
Exhaustion T1	1.43	-	-
Disengagement T1	0.91	-	-
Exhaustion T2	-	2.22*	-
Disengagement T2	-	0.64	-
Exhaustion T3	-	-	1.78*
Disengagement T3	-	-	1.14

* $p < .05$

5 Discussion

The purpose of the present study was to examine the effect of development of burnout on LTSA. It was hypothesized that high initial levels, and an increase in burnout over time, would be associated with an increased risk of LTSA. In regards to both exhaustion and disengagement, it was found that teachers who had high initial levels and whose levels increased over time were more likely to report future LTSA. It was also found that almost half of those who reported LTSA had experienced burnout at some time. These findings clearly support the hypothesis that exhaustion and disengagement, the core components of burnout, lead to LTSA.

The results of this study showed that burnout was associated with prospective LTSA. These findings are in accordance with previous research into the relationship between burnout and sickness absenteeism (e.g., Ahola et al., 2008; Darr & Johns, 2008; Peterson et al., 2011; Toppinen-Tanner et al., 2005). Contrary to previous studies, which were mainly based on cross-sectional burnout data, the results in the present study also examined the effect of change in burnout over time. The results showed that the unadjusted effects of change over time of exhaustion and disengagement had a greater impact on sickness absenteeism than their initial levels. This was evident in that observation that the odds ratios for the increase in both exhaustion and disengagement were more than four times as large as the odds ratios of their initial levels These findings imply that overlooking the effect of change over time, therefore, will likely underestimate the impact of burnout when studying the association between burnout and sickness absenteeism. However, after adding the control variables, neither the initial level of exhaustion or disengagement had a significant effect on LTSA. Instead, it was apparent that the variance in LTSA accounted for by the initial level of each burnout dimension was now explained by its respective level during education. These finding indicate that study burnout affects early career burnout, and that assessments of study burnout can be used to identify who is at risk for developing early career burnout and at risk for future LTSA. The addition of control variables also resulted in that the effect of change over time in exhaustion on LTSA was no longer significant. The effect of change over time in disengagement, however, remained significant. These findings lend support to the theory that disengagement is a coping response to exhaustion (Leiter & Maslach, 1988; Maslach et al., 2001), i.e., exhaustion precedes disengagement. This burnout process has been empirically demonstrated in previous research (e.g., Gustavsson, Hallsten, & Rudman, 2010; Taris, Le Blanc, Schaufeli, & Schreurs, 2005) and could account for the different effects of exhaustion and disengagement on LTSA. It appears as though individuals with already high levels of exhaustion were further along in the burnout process and were, therefore, more likely to have prospective LTSA. When taking into account that exhaustion levels were generally, and consistently, high over the three-year period, it appears that the progression of the burnout process during employment was mainly detectable as an increase in disengagement. This might explain why there was a steeper increase over time in disengagement compared to exhaustion and why only this increase was associated with an increased risk of LTSA.

Contrary to the results of previous studies, the results indicate that disengagement is more strongly associated with an increased risk of LTSA compared to exhaustion. The associated risk of LTSA with levels of respective burnout dimension during education was approximately equal in magnitude, whereas the effect of change on LTSA was only significant for disengagement. Previous research suggest that sickness absenteeism is more strongly associated with exhaustion than with disengagement (e.g., Darr & Johns, 2008; Peterson et al., 2011; Schaufeli & Enzmann, 1998). Exhaustion has also been found to have a more strongly detrimental effect on other health-related outcomes, such as sleep disturbances, health impairment, sickness presenteeism, and mortality (e.g., Ahola, Väänänen, Koskinen, Kouvonen, & Shirom, 2010; Peterson, Demerouti, Bergström, Samuelsson, et al., 2008; Peterson, Demerouti, Bergström, Åsberg, et al., 2008). Exhaustion is characterized by physical and mental strain and it is conceptually more closely related to health which may explain the findings in these previous studies. Disengagement, on the other hand, is characterized by a distancing attitude and is conceptually more closely related to a dysfunctional coping strategy. As discussed previously, because of the already high levels of exhaustion combined with a small increase in levels over time, an increase in burnout was mainly detectable in disengagement. This may be an explanation for the difference in magnitude of the effects and would further support the idea that disengagement is a coping response to exhaustion.

An additional potential explanation of the difference in magnitude of the effects is that the effects found in previous studies may be a consequence of study design, as was demonstrated in the present study. In regards to previous studies that found no effect of disengagement on sickness absenteeism (e.g., Anagnostopoulos & Niakas, 2010; Darr & Johns, 2008; Peterson et al., 2011), it appears that this might be a consequence of the design of the studies in which the impact of change over time was not included. There were no significant effects of exhaustion or disengagement at T1. High levels of exhaustion were associated with an increased risk of LTSA at both T2 and T3. The effects of disengagement, however, remained non-significant at T2 and T3. Thus, analyzing the data in a similar manner to that in previous studies into the effect of burnout on sickness absenteeism would have led to a completely different conclusion. This further highlights the importance of using a longitudinal study design when attempting to make causal inferences.

The cross-sectional prevalence showed that about one in five participants in this study had experienced high levels of burnout at each wave of measurement and the cumulative incidence rates showed that approximately two in five had experienced high burnout symptoms during the three-year period (Table 4). The data also show that it was more common to experience exhaustion compared to disengagement and burnout, and that it was uncommon to experience only high symptoms of disengagement and not burnout (i.e., disengagement concurrent with exhaustion). The amount that experienced disengagement and also experienced exhaustion ranged from 93.3% to 94.1%, whereas the corresponding amount for exhaustion ranged between 38.2% and 45.1%. The initial logistic regression analyses of the bivariate effects showed that there was an increased risk of LTSA associated with incidence of burnout, disengagement, and exhaustion, and that the risk of LTSA appeared to be greatest for exhaustion. However, when taking the overlap of the symptom groups into account the results showed that, although it was more common to experience exhaustion, the incidence of exhaustion alone was not associated with an increased risk of LTSA. Rather, an increased risk was only associated with the combination of exhaustion and disengagement (i.e., burnout). These findings further support the idea of a burnout process where disengagement is a coping response to exhaustion and demonstrate the health impairing effects of burnout (i.e., combination of exhaustion and disengagement) compared to the separate effects of exhaustion and disengagement.

There were 47.0% of those who reported LTSA that had experienced burnout. Although the specific reason for LTSA was not available, this implies that there were 53.0% reported LTSA that was not a consequence of burnout. The most common reason for LTSA in Sweden is musculoskeletal disease followed by mental illness (a broad category comprising burnout cases) (The Swedish Social Insurance Agency, 2011). When comparing these figures to Swedish national levels of LTSA for teachers it is apparent that the amount of non-burnout related LTSA in the sample appears to be low 53.0% compared to 74.6% (The Swedish Social Insurance Agency, 2011). This implies that the sample of beginning teachers appears to be vulnerable to burnout and is a risk group for LTSA related to mental illness.

5.1 Study limitations

LTSA was self-reported and this adds an element of uncertainty to the data. The response alternatives in the questionnaire were designed with consideration to the current prevailing regulations of the Swedish Social Insurance Agency. Individuals who had experienced a sickness absence period longer than 14 consecutive days were, therefore, likely to remember this because it would have involved personal contact with the Swedish Social Insurance Agency. Although it would have been preferable to have used register data to assess LTSA this was not possible because the ethical permit of the PATH study did not comprise collection of register data about the participants' frequency of LTSA. To be able to use register data it would have required an additional signed informed consent from the participants explicitly allowing the collection of their sickness absenteeism from registers. Sickness absenteeism can be sensitive information for many and collection of register data can be associated with a feeling of being monitored. Taken together, it was judged that asking for the signed informed consent of collection of register data was associated with a considerable risk of a substantial amount of participants leaving the study and thus threatened the overall quality of the study. Although register data of LTSA is preferable to self-reported LTSA, previous research on the agreement between self-reported sickness absenteeism and register data show that self-reported sickness absenteeism generally is quite accurate (e.g., Ferrie et al., 2005; Svedberg, Ropponen, Lichtenstein, & Alexanderson, 2010). Of particular interest is the study by Svedberg et al. (Svedberg et al., 2010), they studied the agreement for between self-reported LTSA and register data of LTSA in Sweden using the same criteria for LTSA as in the present study (i.e., >14 consecutive days) and the results showed that the overall agreement was 96%. It can therefore be assumed that the use of self-reported sickness absenteeism did not bias the results considerably. However, register data of sickness absenteeism should preferably be used in future studies to ensure the quality of the data.

As with most longitudinal studies, there were missing data due to dropout from the study. The attrition analysis showed that participants who were younger, had become a parent, or had early symptoms of burnout were less likely to participate in all data collections. Of central interest is that burnout was positively associated with a risk of missingness. This implies that there is a risk that the sample is too healthy and that the prevalence of LTSA and levels of burnout was underestimated. In line with the recommendations of an inclusive analysis strategy, FIML was used as the method of model estimation and the missing data correlates were included as auxiliary variables in the missing-data handling procedure. This improves the power of the analysis and makes the assumption of missing at random more plausible (Collins et al., 2001). Thus, there were missing data but measures were taken to minimize any potential bias in the results from this missing data. Had a non-inclusive analysis strategy (i.e., using list-wise deletion) been applied instead then the sample would have consisted of participants with too low levels of burnout and there would have been an obvious risk that the results would have been biased. A logistic regression analysis was also performed to examine if there were systematic missingness in the study sample compared to the sampling frame. A binary dropout variable (sampling frame versus study sample) was regressed on sex, age, and educational program (preschool and ages 7-11, versus ages 12-18). The results showed that missingness was related to sex ($OR = 0.92$, $p < .01$) and age ($OR = 0.87$, $p < .01$), but not to educational program. There were fewer males and younger students in the study sample compared to the sampling frame.

The generalizability of the findings might be limited due to sample characteristics. The sample consisted only of teachers in their first three years of employment and the participants were all from Sweden. When comparing the levels of LTSA in the present study to Swedish national levels in 2010 across all occupations, they were somewhat higher (7.4% compared to 5.4%) (The Swedish Social Insurance Agency, 2010). It should, however, be noted that national levels were more evenly distributed in regards to sex, whereas the study sample consisted of 85.8% women. When instead only including national levels of the females the levels are more similar (7.4% compared to 7.0%). It thus seems as if the prevalence of LTSA in the study sample was quite representative for Swedish employees, at least for females. In regards to the effects of burnout on LTSA it seems likely that these findings would apply to employees in other occupations and in other countries. Some characteristic of the sample might, however, affect the generalizability. Initial levels of exhaustion was high and the rate of change was quite small, in samples with lower initial levels of exhaustion it is likely that the rate of change will be greater and the effect on LTSA will potentially be of greater magnitude. For this reason, the unadjusted effects are probably better indications of more general effects of burnout on LTSA. This, however, needs to be further validated in studies using a similar longitudinal study-design. Future studies should, therefore, use a longitudinal study-design and include participants from various occupational categories as well as from different countries if possible.

5.2 Conclusions

The present study demonstrated the long-term consequences of early career burnout in regards to sickness absenteeism and highlighted the possible detrimental effect of the development of burnout. The results showed that there is a risk of coming to incorrect conclusions if the change in burnout over time is not taken into account. The results also highlight that, contrary to prior findings of LTSA being more strongly associated with exhaustion compared to disengagement, the combination of exhaustion and disengagement is associated with a greater risk of LTSA compared to the risk when the two burnout dimensions occur separately. Furthermore, the findings support the practical use of burnout assessments during education and early stages of employment to identify persons who may be at risk for LTSA. Early detection of burnout symptoms and intervention strategies would not only reduce the strain on the individual but also prevent the organizational and societal costs associated with LTSA.

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