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Exposure to challenging behaviours and burnout symptoms among care staff: the role of psychological resources

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Abstract

Background Staff supporting individuals with intellectual disabilities are at risk of burnout symptoms. Evidence suggests an association between exposure to challenging behaviours of individuals with intellectual disabilities and burnout symptoms of staff, but the protective role of staff psychological resources in this relation has been understudied.

Method We investigated the association between exposure to challenging behaviours and burnout symptoms of staff and the direct and moderating effects of several psychological resources. Staff (N = 1271) completed an online survey concerning burnout symptoms (subscale Emotional Exhaustion of the Maslach Burnout Inventory), exposure to challenging behaviours and a range of potential psychological resources. We examined main and moderating effects with multilevel analyses. In order to control for the multiple comparisons, P values corrected for false discovery rate (P_{FDR}) were reported.

Results We found a direct relation between exposure to challenging behaviours and increased levels of burnout symptoms in staff (b = .15, $t(670)$ = 4.466, $P_{FDR} < .0001$). Perceived supervisor social support (b = −.97, $t(627)$ = −7.562, $P_{FDR} < .0001$), staff self-efficacy (b = −.23, $t(673)$ = −3.583, $P_{FDR} < .0001$), resilience (b = −.19, $t(668)$ = −2.086, $P_{FDR} < .05$) and extraversion (b = −.20, $t(674)$ = −3.514, $P_{FDR} < .05$) were associated with reduced burnout symptoms. None of the proposed psychological resources moderated the association between exposure to challenging behaviours and burnout symptoms of staff.

Conclusions Of the psychological resources found to be associated with reduced risk of burnout symptoms, staff self-efficacy and access of staff to supervisor social support seem to be the factors that can be influenced best. These factors thus may be of importance in reducing the risk of developing burnout symptoms and improving staff well-being, even though the current study was not designed to

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demonstrate causal relations between psychological resources and burnout symptoms.

Keywords burnout, care staff, challenging behaviours, intellectual disabilities, psychological resources

Background

Staff supporting individuals with intellectual disabilities are at risk of burnout symptoms (Hastings 2002; White *et al.* 2006; Skirrow and Hatton 2007; Devereux *et al.* 2009a; Thompson and Rose 2011; Ryan *et al.* 2019). Burnout is commonly described as a prolonged response to chronic stressors on the job, characterised by emotional exhaustion, depersonalisation and lowered personal accomplishment (Maslach *et al.* 2001). Symptoms of burnout are associated with reduced job satisfaction, increased absenteeism and employee turnover (Kozak *et al.* 2013) and may lead to reduced quality of care for individuals with intellectual disabilities (Lawson and O'Brien 1994; Rose *et al.* 1998). Regarding the development of burnout symptoms, previous studies have focused on the relation between job stressors and burnout (see Ryan *et al.* 2019, for a recent review). It could well be that staff psychological resources, such as adaptive coping strategies, buffer against the negative impact of job stressors (Lazarus and Folkman 1984), but, so far, the moderating effect of such resources remains understudied. A better understanding of the role of staff psychological resources is necessary for the development of strategies to promote staff well-being and, subsequently, the quality of support received by individuals with intellectual disabilities.

Among the many job stressors that have been studied as possibly associated with burnout in staff supporting individuals with intellectual disabilities, exposure to challenging behaviours, including violence and aggression, has been a main focus. Exposure to challenging behaviours is likely to cause negative feelings that may lead to increased stress levels (Hastings 2005; Mills and Rose 2011; Hensel *et al.* 2015). In most studies on this subject, associations between exposure to challenging behaviours and increased levels of stress or burnout symptoms of staff have been found (e.g. Chung and Harding 2009; De Looff *et al.* 2019; Freeman 1994; Hatton *et al.* 1995; Hensel *et al.* 2012; Hensel *et al.* 2015; Howard *et al.* 2009; Judd *et al.* 2017; Ko *et al.* 2012; Lundström *et al.* 2007; Shead *et al.* 2016; Smyth *et al.* 2015; Vassos and Nankervis, 2012), although the strength of the reported associations varies, and some studies have reported no association at all (Chung *et al.* 1996; Chung and Corbett 1998; Mutkins *et al.* 2011; Flynn *et al.* 2018).

The variation in findings could possibly be explained by individual differences in responses to challenging behaviours, that is, some staff members may develop burnout symptoms after exposure to challenging behaviours while others do not. Building upon the theories that explain stress responses as an interaction between an individual and his environment (e.g. transaction theory of stress and coping; Lazarus and Folkman 1984), Hastings (2005) has developed a framework that has been used as a basis for understanding staff responses to challenging behaviours of individuals with intellectual disabilities (e.g. Lambrechts *et al.* 2009). In this framework, a number of psychological resources (including coping strategies and staff self-efficacy) are suggested to buffer or moderate the emotional impact on staff of challenging behaviours of individuals with intellectual disabilities.

Psychological resources can operate in two distinct ways: by decreasing the likelihood of negative outcomes regardless of exposure to adversity (i.e. through a compensatory effect) and by decreasing the likelihood of negative outcomes in the context of adversity (i.e. through a protective effect; Kraemer *et al.* 1997; Luthar 1991; Rutter 1987). In statistical terms, a compensatory factor implies a main effect that reduces the likelihood of a negative outcome (opposite to risk factors), whereas a protective factor implies a moderating effect on the association between a risk variable and a maladaptive outcome. To date, several studies have demonstrated main (e.g. compensatory) effects of psychological resources against the development of symptoms of burnout among staff supporting individuals with intellectual disabilities. However, less is known about the protective (i.e. moderating) effects of these resources on the possible association between exposure to challenging behaviours and symptoms of burnout.

Among many other factors that may reduce the risk of developing burnout symptoms (see Rose 2011, for

a review on staff characteristics), most noticeable is the importance of perceived social support. Perceived social support has consistently been identified as a compensatory mechanism in relation to burnout symptoms of staff supporting individuals with intellectual disabilities (Hatton and Emerson 1993; Skirrow and Hatton 2007; Devereux *et al.* 2009b; Thomas and Rose 2010; Mutkins *et al.* 2011; Gray-Stanley and Muramatsu 2013; Vassos *et al.* 2017). In terms of protective processes, to date, a single study has examined the potentially protective role of perceived social support on the association between exposure to challenging behaviours and burnout symptoms among staff and reported that perceived social support moderated the effect of work demands (including exposure to challenging behaviours) on personal accomplishment (Devereux *et al.*, 2009b).

Adaptive coping strategies (Devereux *et al.*, 2009b; Hatton *et al.* 1995; Hatton *et al.* 1999; Rose *et al.* 2003) and higher self-efficacy in dealing with challenging behaviours (Howard *et al.* 2009; Hensel *et al.* 2015) are also identified as compensatory factors against burnout symptoms among staff supporting individuals with intellectual disabilities. Studies regarding the potentially protective role of these resources on the association between exposure to challenging behaviours and burnout symptoms of staff are scarce. So far, wishful thinking (keeping hope that things will work out in the end) has been shown to partially mediate the relationship between perceived work demands and emotional exhaustion (Devereux *et al.*, 2009b), and higher self-efficacy decreased the strength of the relationship between exposure to aggression and burnout (Howard *et al.* 2009; Shead *et al.* 2016).

Additionally, staff personality traits may partly explain why exposure to challenging behaviours leads to different stress responses among different individuals. Research findings on the role of personality traits in relation to burnout symptoms of staff supporting individual with intellectual disabilities were mixed. Although one study demonstrated that extraversion may be important in reducing the risk of developing burnout symptoms among staff (Chung and Harding 2009; Rose, David and Jones, 2003), another study reported no significant compensatory effect of extraversion or agreeableness or conscientiousness (De Looff *et al.* 2019). When focusing on the potentially protective role of personality traits on the association between exposure to challenging behaviours and burnout symptoms of staff, neuroticism was found to moderate the relationship between demands and higher stress (Rose, David and Jones, 2003), whereas Chung and Harding (2009) found that neuroticism and extraversion moderated the relationship between exposure to challenging behaviours and personal accomplishment. However, a recent study found no moderating effects in relation to burnout for neuroticism and altruism (De Looff *et al.* 2019).

At last, resilience, that is, staff ability to bounce back or recover from stress, may be important in reducing the risk of developing burnout, as has been established among nurses (Mealer *et al.* 2012). To the best of our knowledge, the single study among staff that took resilience into account found that it did not predict burnout outcomes (Nevill and Havercamp 2019), and, so far, no study has examined the potentially protective role of resilience with respect to the association between exposure to challenging behaviours and burnout symptoms of staff supporting individuals with intellectual disabilities.

To develop strategies to prevent staff from suffering from burnout symptoms, more research is needed on the protective role of staff psychological resources against burnout symptoms among staff supporting individuals with intellectual disabilities. Therefore, in the current study, we aimed (1) to investigate the association between staff exposure to challenging behaviour in individuals with intellectual disabilities and symptoms of burnout among staff supporting them and (2) to examine the direct (i.e. compensatory) and moderating (i.e. protective) effects of several possible staff psychological resources on the relation between exposure to challenging behaviours and symptoms of burnout of staff. Regarding the first aim, we expected a positive association between exposure to challenging behaviours and burnout symptoms. With respect to the second aim, we hypothesised that the investigated psychological resources had a direct negative effect on burnout symptoms and a moderating effect on the relation between exposure to challenging behaviours and symptoms of burnout of staff.

Methods

Study design

Participants in this cross-sectional study completed an online survey on burnout symptoms, exposure to challenging behaviours and a broad range of psychological resources. After completing the survey within 3 weeks, participants received a gift voucher worth 10 Euros.

The Medical Ethical Committee of the University Medical Centre Groningen waived ethical approval based on the applicable regulations.

Participants

Participants were care staff working for organisations that delivered day or residential services to individuals with intellectual disabilities in the Netherlands. Staff were eligible to participate if they provided daily care to adults with intellectual disabilities.

Table 1 shows an overview of participants' responses (the means and standard deviations of scores on each variable). The total number of participants who gave informed consent and started to fill in the questionnaire was 1447. Of these, 1271 (88%) worked with individuals with intellectual disabilities who showed challenging behaviours. To put this into perspective, the total amount of staff supporting individuals with intellectual disabilities in the Netherlands is estimated 157 000 (Centraal Bureau voor de Statistiek 2018). Not all 1271 respondents working with individuals with intellectual disabilities and challenging behaviours completed all questionnaires in the survey. Therefore, the total number of respondents varies for the different variables. Table 1 presents the number of respondents per questionnaire. The majority of participants was female (89%). The mean age of the participants was 37.6 (SD = 11.17, range 17 to 66), and the mean years of experience in working with individuals with intellectual disabilities was 14 years (SD = 9.62, range 0 to 50).

Based on the cut-off scores of the Dutch version of the Maslach Burnout Inventory, 14% (n = 174) of the 1271 participants met the criteria of a clinical burnout: a high score on Emotional Exhaustion (converted score ≥2.50) and a high score on Depersonalisation (when male: converted score ≥1.80, when female, converted score ≥1.60) or a low score on Personal Accomplishment (converted score ≤3.70; Schaufeli and Dierendonck 2000).

Recruitment

Staff were recruited in two different ways. First, we recruited staff with an advertisement published in a Dutch magazine on individuals with intellectual disabilities, in print and through the magazine's social media. Second, we asked all organisations providing day or residential services to individuals with intellectual disabilities that were member of the Dutch association for disability organisations [Vereniging Gehandicaptenzorg Nederland (VGN); list of members retrieved in October 2018] to assist in the recruitment of their staff. The VGN was chosen because it is the only Dutch association for organisations that provide care for individuals with intellectual disabilities. It has a large number of members, allowing us to directly reach our intended participants. When an organisation agreed to assist in the recruitment of staff, they pointed the study out to staff by physical leaflets, (online) newsletters, social media and direct emails.

In all cases, staff were referred to the study website that provided information on the study procedures and registration. After registration, staff received an email with a link and a unique code to access a digital informed consent form and, subsequently, the online survey.

Outcome measures and instruments

In line with previous studies (e.g. Kowalski *et al.* 2010; Hensel *et al.* 2015), we used the Emotional Exhaustion subscale of the Maslach Burnout Inventory Human Services Survey (MBI-HSS; Maslach *et al.* 1996) to measure burnout symptoms. Emotional exhaustion refers to a feeling of being overextended and depleted of emotional and physical resources (Maslach *et al.* 2001). Staff scored eight items using a 7-point Likert-type scale ranging from to 'never' (0) to 'everyday' (6; maximum possible score: 48). Previous research reported a good internal consistency for this scale (α = .87; Schaufeli and Dierendonck 2000). Cronbach's alpha coefficient for the Emotional Exhaustion subscale in our sample was .90.

To assess the presence and severity of challenging behaviours staff were being exposed to in their work,

Table 1 Overview of the mean scores and total number of respondents for the different variables

	Staff who worked with individuals with ID and challenging behaviours (*N* = 1271)			Staff who worked with individuals with ID without challenging behaviours (*N* = 176)		
Variable	***n*[§]**	***M***	***SD***	***n*[§]**	***M***	***SD***
Age	1271	37.60	11.17	176	39.28	10.67
Gender						
Male	144 (11.4%)			22 (12,5%)		
Female	1121 (88.6%)			154 (87,5%)		
Total *n*	1265			176		
Working hours (week)	1271	27.50	6.25	175	25.80	6.22
Working experience (years)	1271	14.04	9.62	176	14.89	10.67
Education level						
Low	10 (1.0%)			7 (4.5%)		
Middle	606 (63.0%)			100 (63.7%)		
High	344 (35.8%)			50 (31.8%)		
Total *n*	963			157		
The Maslach Burnout Inventory-Human Services Survey (MBI-HSS)						
Emotional Exhaustion (EE; range: 0–48)	1271	15.71[‡]	8.84	176	12.48	7.88
Depersonalisation (DP; range: 0–30)	1271	4.26[‡]	3.67	176	3.16	3.49
Personal Accomplishment (PA; range: 0–42)[†]	1271	25.49[‡]	4.79	176	24.92	5.37
The Aberrant Behaviour Checklist (ABC)						
Irritability subscale (range 0–45)	765	22.89	9.20			
The Job Content Questionnaire (JCQ)						
Social support: Supervisor (range: 4–16)	1271	10.73	2.50			
Social support: Co-worker (range: 4–16)	1271	12.72	1.87			
Challenging behaviour self-efficacy scale (CBSES; range: 5–35)	1067	25.66	4.94			
Utrecht Coping List (UCL)						
Active approach (range: 7–28)	983	20.00	3.21			
Seeking social support (range: 6–24)	983	15.29	3.33			
Expression of emotions (range: 3–12)	983	6.13	1.59			
Comforting thoughts (range: 5–20)	983	12.51	2.47			
NEO Five Factor Inventory (NEO-FFI 3)						
Extraversion (range: 12–60)	1007	42.17	5.73			
Conscientiousness (range: 12–60)	1007	46.34	5.05			
Agreeableness (range: 12–60)	1007	45.06	5.16			
Brief Resilience Scale (BRS; range: 6–30)	968	20.31	3.79			

The ranges given are the minimum and maximum possible scores on the variables.

n, number of respondents for the different variables; *M*, mean; *SD*, standard deviation.

[†]Personal Accomplishment is interpreted in the opposite direction to the other MBI dimensions, that is, higher scores indicate lower burnout.

[‡]Mean converted scores: EE: 1.96; DP, male: 1.10; female: 0.82; PA: 4.25. Based on the cut-off scores of the Dutch version of the Maslach Burnout Inventory, the mean converted scores on EE, DP and PA found in this study are considered moderate (Schaufeli and Dierendonck 2000).

[§]Numbers vary due to participants not completing the entire survey.

we used the Irritability subscale of the Aberrant Behaviour Checklist (ABC, Aman *et al.* 1985). Usually, this ABC subscale measures the behaviours of one particular individual with 15 items reflecting specific behaviours. For the current study, we asked staff to rate the 15 items reflecting the general

presence and severity of challenging behaviours during their work in the prior 4 weeks, not for one individual but overall (0 = not a problem at all, 1 = the behaviour is a problem but slight in degree, 2 = the problem is moderately serious, and 3 = the problem is severe in degree; maximum possible score: 45). In this study, the Cronbach's alpha coefficient for the (adapted) Irritability subscale was .89.

Staff psychological resources

We measured staff's ability to recover from stress with the Brief Resilience Scale (BRS; Smith *et al.* 2008). It consists of six items with a 5-point Likert scale, ranging from 'strongly disagree' (1) to 'strongly agree' (5; maximum possible score: 30). According to Smith *et al.* (2008), the BRS has a good internal consistency (α = .80–.91). In this study, the Cronbach's alpha coefficient was .77.

We measured staff self-efficacy in dealing with challenging behaviours with the Challenging Behaviour Self-Efficacy Scale (CBSES; Hastings and Brown 2002). The CBSES is a five-item measure, with a 7-point Likert scale ranging from 'never' (1) to 'everyday' (7; maximum possible score: 35). The CBSES has been found to have a good level of internal consistency (α = .81; Hutchinson *et al.* 2014). We found a Cronbach's alpha coefficient of .84.

For measuring the personality dimensions extraversion, conscientiousness and agreeableness, we used the subscales Extraversion (12 items), Conscientiousness (12 items) and Agreeableness (12 items) of the NEO Five Factor Inventory (NEO-FFI, Costa and McCrae 1992; Dutch version (Hoekstra, Ormel and De Fruyt 1996). Staff scored the 36 items on a 5-point rating scale ranging from 'totally disagree' (1) to 'totally agree' (5; maximum possible score: 180). According to the Dutch manual (Hoekstra *et al.* 1996), the psychometric properties of the NEO-FFI are sufficient (α = .74). Cronbach's alphas for the scales used in this study were ranging from .70 to .75.

To assess adaptive coping styles, we used the subscales Active approach (seven items), Seeking social support (six items), Expression of emotion (three items) and Comforting thoughts (five items) of the Utrechtse Coping Lijst (UCL, Schreurs *et al.* 1993). Participants rated the items on a 4-point scale, ranging from 1: 'never or hardly ever applied' to 4: 'applied very often' (maximum possible scores 28, 24, 12 and 20, respectively). The UCL has good psychometric properties including a moderate to good internal consistency (α = .64–.82; Schreurs *et al.* 1993). Cronbach's alphas for the scales used in this study were .82, .86, .66 and .71, respectively.

Perceived supervisor and co-worker social support were assessed with the subscales Social support Supervisor (four items) and Social support Co-worker (four items) from the Job Content Questionnaire (JCQ; Karasek et al. 1998). The items had to be rated on a 4-point Likert scale ranging from 'strongly disagree' (1) to 'strongly agree (4; maximum possible scores on both subscales: 16). Reliability studies of the JCQ have demonstrated good internal consistency (α = .76–.86: Karasek *et al.* 1998). The Cronbach's alpha coefficients for the subscales were .87 and .86, respectively.

Statistical analyses

To investigate the association between staff exposure to challenging behaviours and burnout symptoms we used Pearson's correlation. Cases with missing data were removed pairwise.

Direct and moderating effects of several psychological resources were assessed using two models. First, associations between psychological resources (resilience, supervisor and co-workers social support, self-efficacy, adaptive coping strategies and personality traits) and emotional exhaustion were examined with Pearson's correlation. Cases with missing data were removed pairwise.

Next, taking into account the hierarchical structure of the data (participants were nested within organisations), we conducted a series of multilevel analyses to examine main effects of exposure to challenging behaviours and of psychological resources on emotional exhaustion. When conducting multilevel analyses, we worked up from a standard model to a model with random effects, comparing each model with the former by looking at the χ^2_{Change} (based on −2 log-likelihood and df_{Change}; Snijders and Bosker 2011).

In model 1, we ignored that our data had a hierarchical structure and entered a fixed effect for the independent variable only. In model 2, we added random intercepts, and in model 3, we added random slopes. Subsequently, in model 4, psychological

resources that significantly correlated with emotional exhaustion in the correlation analyses were entered simultaneously so that we could investigate the significance of their main effect on emotional exhaustion. In model 5, we investigated the significance of the interaction effect of each possible moderator. In order to correct for the multiple comparisons, a false discovery rate (FDR) correction was applied and FDR corrected P values (P_{FDR}) were reported (significance is defined as, e.g. $P_{FDR} < .05$).

All statistical analyses were conducted using SPSS software (version 26.0).

Results

The association between exposure to challenging behaviours and burnout

As presented in Table 2, we found a small but significant positive correlation between scores on exposure to challenging behaviours and emotional exhaustion ($r = .229$, $n = 765$, $P < .001$).

Compensatory and protective factors against burnout symptoms

As presented in Table 2, statistically significant small to moderate negative associations were found between scores on emotional exhaustion and perceived supervisor social support, self-efficacy in dealing with challenging behaviours, active approach, extraversion, conscientiousness and resilience. We found small significant positive correlations between emotional exhaustion and scores on expression of emotions.

The results of the multilevel analyses of main effects of exposure to challenging behaviours and psychological resources on emotional exhaustion are summarised in Table 3. The relationship between scores on level of exposure to challenging behaviours and on emotional exhaustion showed significant variance in intercepts; $\text{var}(u_{oi}) = 3.58$, $\chi^2_{\text{Change}}(1) = 4.249$, $P < .05$ (Table 3, model 1), but not in slopes across organisations; $\chi^2_{\text{Change}}(1) = 3.192$, $P > .05$ (Table 3, model 2). Thus, the mean values for the relationship between level of exposure to challenging behaviours and emotional exhaustion varied significantly across the different organisations, whereas the relationship between challenging

Table 2 Correlations between emotional exhaustion and exposure to challenging behaviours and between emotional exhaustion and staff psychological resources

	Exposure to aggression	Supervisor social support	Co-worker social support	Self-efficacy	Active approach	Seeking social support	Expression of emotions	Comforting thoughts	Extra-version	Conscien-tiousness	Agreeable-ness	Resilience
Emotional exhaustion	**.229****	**−.340****	**−.107****	**−.169****	**−.143****	−.052	**.126****	−.001	**−.198****	**−.122****	−.044	**−.215****

*Correlation is significant at $P < .05$ (two-tailed).
**Correlation is significant at $P < .01$ (two-tailed).

Table 3 Multilevel analysis: compensatory and protective factors against burnout symptoms

	Model 0: Fixed effects only		Model 1: Adding random intercepts		Model 2: Adding random slopes		Model 3: Adding co-variates		Model 4: Adding interactions	
	Parameter	***SE***	**Parameter**	***SE***	**Parameter**	***SE***	**Parameter**	***SE***	**Parameter**	***SE***
Fixed										
Intercept	11.14**	.85	11.16***	.88	11.18***	.85	42.11***	4.17	40.40***	9.36
Exposure to CB	.22**	.03	.22***	.03	.22***	.04	.15***	.03	.21	.34
Supervisor social support							−.97***	.13	−.59	.34
Co-worker social support							−.05	.17	−.05	.17
Self-efficacy							−.23***	.07	−.31***	.17
Resilience							−.19*	.09	−.34*	.25
Active approach							.05	.11	.06	.11
Expression of emotions							.42*	.19	.23*	.52
Extraversion							−.20***	.06	−.12	.15
Conscientiousness							−.07	.07	−.07	.07
Exposure to CB *supervisor social support									−.02	.01
Exposure to CB *self efficacy									.00	.00
Exposure to CB *resilience									.00	.00
Exposure to CB *expression of emotions									.00	.00
Exposure to CB *extraversion									.00	.00
Random										
Individual	76.61***	3.92	73.53***	3.93	73.14***	3.93	60.42***	3.47	60.02***	3.45
Organisation			3.30	1.96	.47	2.99	1.68	1.58	1.89	1.63
Goodness of fit										
−2 log-likelihood (*df*)	5490.055 (3)		5483.751 (4)		5482.614 (5)		4692.186 (12)		4689.383 (17)	
χ^2_{Change} (df_{Change})			−6.304 (1)*		−1.134 (1) N.S.		791.565 (8)**		−2.803 (5) N.S.	

CB, challenging behaviours; *SE*, standard error.

*Correlation is significant at $P_{FDR} < .05$ (two-tailed).

**Correlation is significant at $P_{FDR} < .01$ (two-tailed).

***Correlation is significant at $P_{FDR} < .001$ (two-tailed).

behaviours and emotional exhaustion as such was the same across the organisations.

The following factors significantly predicted scores on emotional exhaustion (Table 3, model 3): exposure to challenging behaviours ($b = .15$, $t(670) = 4.466$, $P_{FDR} < .0001$), perceived supervisor social support ($b = -.97$, $t(627) = -7.562$, $P_{FDR} < .0001$), extraversion ($b = -.20$, $t(674) = -3.514$, $P_{FDR} < .05$), self-efficacy in dealing with challenging behaviours ($b = -.23$, $t(673) = -3.583$, $P_{FDR} < .0001$), resilience ($b = -.19$, $t(668) = -2.086$, $P_{FDR} < .05$) and expression of emotions ($b = .42$, $t(670) = 2.172$, $P_{FDR} < .05$).

We found no significant interaction effects between exposure to challenging behaviours and any of the psychological resources measured (Table 3, model 4).

Discussion

The present study investigated the association between staff exposure to challenging behaviours and burnout symptoms of staff and the direct and moderating effects of staff psychological resources. In line with Hensel *et al.* (2012) who found that as many as 90% of staff encounter aggression in their work, 88% of staff participating in our study were exposed to challenging behaviours in the last 4 weeks prior to filling out the survey. Additionally, our findings indicate that 14% of staff participating in our study were at high risk of burnout. The levels of emotional exhaustion, depersonalisation and personal accomplishment in the current study were comparable with those of staff working in general

human services (Schaufeli and Dierendonck, 2000). The positive association between exposure to challenging behaviours and increased levels of burnout symptoms in our study is consistent with most previous studies (e.g. Chung and Harding 2009; De Looff *et al.* 2019; Hensel *et al.* 2012; Hensel *et al.* 2015; Howard *et al.* 2009; Mills and Rose 2011; Vassos & Nankervis, 2012).

This study identified four likely psychological resources that may compensate for burnout: perceived supervisor social support, self-efficacy, resilience and extraversion. The relation between exposure to challenging behaviours and burnout symptoms and the effects of perceived supervisor social support, self-efficacy, resilience and extraversion were significant but explained only a relatively small amount of the variance. It is important to keep in mind that burnout may be related to many other factors, such as staff characteristics (e.g. staff attributions about challenging behaviours; Rose 2011) and organisational factors (e.g. ambiguity and conflicts about the role of staff members in the organisation; Robertson *et al.* 2005).

Our results suggest that perceived supervisor social support is valuable, while perceived co-worker social support may not be sufficient to counter burnout symptoms. These are important findings, because co-worker support seems to be more present than supervisor support in practice. In an earlier study into challenging behaviours towards staff supporting individuals with intellectual disabilities, 73% of staff exposed to aggressive behaviours mentioned that aggressive incidents were exclusively managed by internal discussions with colleagues and not by any form of support from supervisors (Lundström *et al.* 2007). Our results indicate that accessible and readily available social support from supervisors may be important for reducing burnout symptoms.

In line with previous studies (Howard *et al.* 2009; Hensel *et al.* 2015), our study showed that higher levels of staff self-efficacy in dealing with challenging behaviours were associated with lower levels of burnout symptoms. This suggests that improving self-efficacy in dealing with challenging behaviours may reduce the risk of developing burnout symptoms. Training staff in how to deal with challenging behaviours, for example, with Positive Behaviour Support (e.g. Lowe *et al.* 2007; Davies *et al.* 2015; Stocks and Slater 2016; Klaver *et al.* 2020), could possibly be helpful in increasing staff self-efficacy.

Regarding the role of resilience, our outcomes demonstrated a direct negative effect on burnout symptoms of staff, which confirmed earlier findings among nurses (Mealer *et al.* 2012) yet were in contrast with a recent study among staff supporting individuals with intellectual disabilities (Nevill and Havercamp 2019). In that study, it was found that resilience did not reduce the risk of developing burnout symptoms. Perhaps the relatively small sample (N = 102; 2019) limited the ability to detect significant effects in the latter study. Clearly, more research is needed to confirm and elaborate our findings.

Regarding personality traits, our finding that staff members who reported a higher level of extraversion experienced fewer burnout symptoms corroborated earlier research (Chung and Harding 2009), indicating a compensatory role for being extraverted. The expected negative associations between burnout symptoms and conscientiousness and agreeableness were confirmed for conscientiousness only of the bivariate correlations. However, this association was nonsignificant when we controlled for the other psychological resources. Although in line with De Looff *et al.* (2019) who based their conclusions on a comparable sample, this was in contrast to our expectations based on the broader burnout literature (e.g. meta-analysis of Swider and Zimmerman 2010). To gain insight into the reasons for this difference between sample populations, more research into the role of personality traits in relation to burnout symptoms of staff supporting individuals with intellectual disabilities is required.

In contrast with our expectations, we found no compensatory role of adaptive coping strategies for symptoms of burnout when controlling by other predictors. This is unexpected given the negative associations between expression of emotions and burnout symptoms reported in several previous studies (Devereux *et al.*, 2009b; Hatton & Emerson, 1995; Hatton *et al.* 1995; Hatton *et al.* 1999; Rose *et al.* 2003). It could be that the effect of coping with stress by expressing emotions differs in specific circumstances, for example, whether shared emotions are acknowledged and acted upon by supervisors rather than by direct colleagues only.

When interpreting our results, several methodological considerations should be kept in mind. First, because personal perceptions play a role in the experience of stressors, we used staff reports to measure challenging behaviours. This may have led to different results than we might have found if we had recorded the actual challenging behaviours that staff was exposed to (e.g. Howard *et al.* 2009). What may have been important in this respect as well is that this study focused on emotional exhaustion as a single dimension of burnout symptoms, although in line with earlier research (e.g. Kowalski *et al.* 2010; Hensel *et al.* 2015). Emotional exhaustion has been suggested as the core element of burnout and the most obvious manifestation of this complex syndrome (Maslach, 2001). Maslach *et al.* (2001) noted that when people describe themselves or others as experiencing burnout, they most often refer to the experience of exhaustion. In order to investigate the full concept of burnout, future studies should include the broader structure of burnout symptoms to gain further insight the effect of psychological resources on both emotional exhaustion and depersonalisation.

The associations reported were based on a cross-sectional assessment, and therefore, causal relations should not be inferred. Longitudinal data are necessary to gain more insight in causality. For example, monitoring staff after encountering challenging behaviours would increase the insight into the aftermath of the occurrences of challenging behaviours (by, e.g. ecological momentary assessment methods combined with physiological assessments). Including the role and impact of supervisor support, such studies would allow insight in the functioning and protective capacities of supervisor social support. At last, we used a sample of voluntary participants, which may not be fully representative of the entire population of staff. Despite the recruitment of participants across the country and from different organisations, it is possible that staff willing to report freely on their personal experiences in working with individuals with intellectual disabilities was overrepresented.

Conclusions

The current study aimed to investigate the association between staff exposure to challenging behaviours and burnout symptoms of staff and the direct and moderating effects of staff psychological resources. We demonstrated that staff members' perceived supervisor social support, self-efficacy, resilience and extraversion may compensate for burnout, although prospective longitudinal research is required to determine causal links. Strategies to improve staff well-being and prevent burnout could possibly be enhanced by strengthening compensatory factors, that is, staff self-efficacy in dealing with challenging behaviours and access to supervisor social support.

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Conflict of Interest

The authors report no potential conflict of interest.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author, M. Klaver, upon reasonable request.

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