Compassion Fatigue Among Staff Working with People Who Have Intellectual Disability

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Declaration

I declare that this work has not been submitted for any other degree or to any other institution.

Structure and Word Counts

Literature Review

Excluding references and tables: 8,000

Including references and tables: 13,663

Empirical Project

Excluding references and tables: 7,991

Including references and tables: 11,908

Total

Excluding references and tables: 15,991

Including references and tables: 25,571

Lay Summary

(Targeted towards research participants)

Compassion fatigue results from helping others who are suffering, and it includes three elements: increased burnout, increased secondary traumatic stress, and reduced compassion satisfaction. Previous research has shown that if left unmanaged it can increase people's job stress, people's desire to leave their jobs, staff absences, and it can leave people feeling dissatisfied with their jobs. Compassion fatigue can also increase the likelihood of making medical mistakes and can impact the overall quality of care staff are able to provide. However, it is still not known why certain staff in intellectual disability (ID) services are more vulnerable to compassion fatigue than others, and what might be linked to increased compassion fatigue.

The first part of this thesis is a review of existing research, and it focuses on one element of compassion fatigue: burnout. Burnout is further broken down into three parts: emotional exhaustion, depersonalisation. (i.e., lack of connectedness with those we care for), and personal accomplishment (i.e., feelings of achievement in our work). The review aimed to understand the relationship between behaviours that challenge and burnout in services for people who have ID. Fifteen papers were reviewed and the results showed that an increase in behaviours that challenge is linked to an increase in emotional exhaustion and an increase in depersonalisation. Though, it is difficult to know from

the included papers whether behaviours that challenge are the cause of emotional exhaustion and depersonalisation. However, as the results suggested that the presence of behaviours that challenge would also suggest the presence of burnout, it is recommended that services carefully monitor the wellbeing of staff who work with behaviours that challenge and should offer additional support to reduce the risk of staff developing burnout.

The second part of this thesis is a research study which aimed to understand whether staff's attachment style and coping self-efficacy (i.e., how able they feel to cope with stressful work situations) is linked to compassion fatigue. Attachment styles are certain ways in which people relate to others. Individuals with 'anxious' attachments often want to be close to others and persistently seek approval, whereas those with 'avoidant' attachments prefer to be independent and often feel uncomfortable around others. The current study asked staff working in services for people who have ID and who display behaviours that challenge to complete several questionnaires about their attachment style, coping self-efficacy and compassion fatigue, and the results showed both anxious and avoidant attachment styles are linked to compassion fatigue, either directly, or indirectly through staff's coping self-efficacy.

Overall, these results have contributed to our understanding of why certain staff are more vulnerable to compassion fatigue than others. Hopefully, these results can help inform staff training, and encourage services to introduce programmes to support staff. However, more research is needed as questions remain about whether other staff characteristics may also make an impact, as well as whether increasing staff's coping self-efficacy can be helpful in reducing compassion fatigue.

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Section 1: Systematic Review and Meta-Analysis

A Meta-Analysis of Staff Burnout and Behaviours That Challenge in Services for People Who Have

Intellectual Disability

Abstract

Objectives. A relationship between behaviours that challenge and staff burnout in services for people who have intellectual disability (ID) has long been considered. Over the past decade research in this area has grown due to the impact on staff well-being, the quality-of-care individuals who have ID receive and the impact on services. The aim of the meta-analysis was to quantify the association between staff burnout and behaviours that challenge in services for people who have ID.

Methods: A comprehensive systematic search was carried out, in October 2021, using PsychINFO, MEDLINE, Scopus, PubMed, EThOS and ProQuest. Risk of bias was assessed using the Effective Public Healthcare Panacea Project Quality Assessment Tool for Quantitative Studies. Data were analysed using random effects models.

Results: Fifteen papers were reviewed, and 13 were included in the meta-analysis. Collectively, studies included 3557 staff. Studies were conducted across several countries and were published between 1998 and 2021. Behaviours that challenge were related to emotional exhaustion ($r = .217$, 95% CI: .149, .283, $p < .001$) and depersonalisation ($r = .140$, 95% CI: .071, .207, p < .001). No relationship was found between behaviours that challenge and personal accomplishment ($r = .021$, 95% CI: - .021, .064, $p = .328$). No significant moderators were identified.

Conclusions: There is a positive association between behaviours that challenge and emotional exhaustion, as well as depersonalisation. However, these findings do not indicated causation due to the correlational nature of the included studies. Implications for clinical practice and research are discussed.

Practitioner Points

- There was a small positive association between behaviours that challenge and emotional exhaustion, as well as depersonalisation, in staff working in ID services.

- The present sample included an overwhelming majority of female staff which may limit the generalisability of the findings.

- There are significant inconsistencies regarding the types of, and measures of, behaviours that challenge.

- The lack of information reported within studies impacted the exploration of heterogeneity.

Keywords: Burnout, compassion fatigue, intellectual disability, behaviours that challenge.

Introduction

Intellectual Disability & Behaviours that Challenge

Intellectual disability (ID) refers to an individual's impaired ability to learn, understand and apply new and complex information. Individuals with ID have "a reduced ability to cope independently" (Word Heath Organisation, 2021, p.1) and their difficulties are present prior to adulthood (<18 years) with a long-lasting impact on their development. A previous meta-analysis found that ID is estimated to affect 1% of the population globally (Maulik et al., 2011) and individuals are often characterised as having either a mild, moderate, severe, or profound ID.

Behaviours that are considered challenging most commonly manifest as self-injurious, aggressive, and stereotyped behaviours and can lead to negative consequences, such as harm to oneself or others (Matson et al., 2011). These behaviours are rated as severe or as moderate, and occur on a weekly basis, or as mild and occur daily (Bowring et al., 2017; Nichols et al., 2020). The prevalence of behaviours that challenge, by individuals with ID, is much higher than the general population (Bowring et al., 2017; Lunqvist, 2013). Previous studies have estimated that approximately 10-20% of individuals with an ID display behaviours that challenge (Kiernan & Kiernan, 1994; Oliver et al., 1987) and for those with profound or multiple disabilities it is estimated to be much higher (Emerson, 2001; Poppes et al., 2010). More specifically, a study found that stereotyped behaviours were observed in 82% of individuals with a profound ID (IQ > 25), and aggressive/destructive behaviours were observed in 45% (Poppes et al., 2010).

Nevertheless, the assessment of behaviours that challenge is not straightforward. Traditionally, behaviours that challenge are assessed through standardised instruments measuring their frequency, intensity, and duration (Baker & Daynes, 2010). However, there are notable inconsistencies between measures. A number of instruments solely measure aggression, whereas others include the assessment of self-injurious and stereotyped behaviours or will focus on the function of the behaviour (National Institute for Health and Care Excellence, 2015). Furthermore, the setting in which the behaviour is displayed can influence whether it is considered challenging. It has

previously been thought that what constitutes as acceptable behaviour can vary between settings and differences arise between professionals with cultural differences often influencing professionals' perception of a behaviour (Emerson & Einfeld, 2011).

Behaviours that challenge are often conceptualised as an expression of an individual's unmet need, fuelled by their communication difficulties (Smidt et al., 2007). Several factors have been shown to influence the development of behaviours that challenge, including sociodemographic features, level of ID, co-occurring disorders, mental health difficulties, communication impairments and social disadvantages (Bowring et al., 2017; Crocker et al., 2007; Heyvaert et al., 2010; Holden & Gitlesen, 2009). Additionally, behaviours that challenge tend to be extremely persistent throughout the lives of individuals with an ID (Totsika & Hastings, 2009). When severe, they can have an adverse effect on the individual (and their social support), leading to admission into expensive, specialist, residential care services, for extended periods of time (Emerson, 2001). As a result, individuals often require life-long support from a young age, which is provided by a range of services and professionals (Courtenay & Cooper, 2021).

In summary, professional carers play a significant role in the lives of individuals with an ID and the importance of them cannot be overstated. Research has highlighted that the interaction between an individual who has ID and their carers can influence the development and maintenance of behaviours that challenge (Hastings, 2005; Oliver et al., 2005). For example, it is thought that carers' responses can trigger behaviours that challenge (Hastings & Brown, 2000). Nevertheless, it is also important to consider the bidirectionality of this relationship, as previous studies have shown an association between poorer psychological wellbeing in staff and an increased exposure to behaviours that challenged (Ryan et al., 2021).

Burnout

Several factors have been shown to negatively impact care staff reactions to behaviours that challenge, such as their emotional wellbeing (Hastings, 2005) and one construct that has been suggested to represent the poorer psychological wellbeing experienced by staff is burnout (Hatton et

al., 1999). Burnout is typically described as a reaction arising in response to prolonged untreated stress (Maslach et al., 1996) and is predominantly observed in professions that involve emotional investment (Maslach et al., 2001). Burnout is often conceptualised as having three core components: high emotional exhaustion, high depersonalisation, and low personal accomplishment (Maslach et al., 1997). Emotional exhaustion refers to a long-lasting state of emotional and physical depletion and it has been linked to increased work stress, which in turn has been linked to depression (LaMontagne et al., 2008). Depersonalisation refers to a lack of connectedness with those who are usually the recipients of an individual's care and, personal accomplishment refers to an individual's feelings regarding competence and achievement in their work (Maslach, 1993). The first and most commonly used measure to assess burnout is the Maslach Burnout Inventory (MBI; Maslach & Jackson, 1981) which assesses all three components of burnout. However, a number of additional measures have since been developed, with several of them assessing only two components of burnout (i.e., emotional exhaustion and depersonalisation), or the sole component of emotional exhaustion (Maslach & Leiter, 2016).

Several studies carried out in general populations have found that personal, psychosocial, and environmental factors can influence the development of burnout. More specifically, a number of studies have reported an association between burnout and job demands, role clarity, work predictability, quality of leadership and lack of resources (Borritz et al., 2005; Schaufeli & Bakker, 2004). Furthermore, higher levels of burnout are reported amongst younger individuals compared to their older counterparts (Jackson & Rothmann, 2005; Randall, 2007; Patrick & Lavery, 2007). Additionally, a study looking at staff working in community ID services found an association between males and high depersonalisation scores (Mitchell & Hastings, 2001). Other factors found to be related to burnout in services for individuals who have ID are years of experience, (Chung et al., 1996), hours worked (Mitchel & Hastings, 2001), feeling in need of further training (Chung & Corbett, 1998) and supervisory support (Gill-Monte & Peiro, 1998).

Additionally, burnout has been found to impact the mental well-being of staff working with individuals who have ID and associations with depression and anxiety have been reported (Aitken & Schloss, 1994; Gill-Monte & Perio, 1998). Furthermore, burnout has been linked to poorer physical well-being and a relationship between burnout and musculoskeletal disease amongst women, and cardiovascular disease amongst men has been found (Honkonen et al., 2006). Previous research has also reported a link between increased levels of burnout, job dissatisfaction and turnover intentions (Scanlan & Still, 2013), as well as absenteeism, with burnout related absences lasting prolonged periods of time (Hallsten et al., 2005). Hastings (2002) also highlighted the link between burnout, absenteeism, and an increased intention to quit, in staff working with individuals who have ID.

Previous literature has found that staff supporting individuals who have ID are at risk of burnout (Devereux et al., 2009; Ryan et al., 2021; Skirrow & Hatton, 2007) and burnout experienced by staff can have adverse effects on services and the individuals they care for. In general, burnout is associated with impaired quality of care (Demerouti et al., 2014; Weigl et al., 2015) and an increased risk of making medical mistakes (Montgomery et al., 2011). Staff experiencing burnout have also been found to have negative, rejecting feelings towards patients resulting in poorer outcomes (Holmqvist & Jeanneau, 2006). Interestingly, prior research has found that staff working within institutional care settings experience increased cynicism, compared to those working in community based residential services (Aitken & Schloss, 1994).

The Current Review

The literature presented highlights the importance of understanding the relationship between staff (i.e., professional caregivers) burnout and behaviours that challenge, due to the potential negative consequences on the quality-of-care provided, staff wellbeing, and the impact on services. However, to date, no systematic review has been conducted on the association between staff burnout and behaviours that challenge. By systematically reviewing and meta-analysing all available research, I aim to answer the following questions: (1) Is there an association between staff burnout and behaviours that challenge in services for people who have ID? (2) What is the magnitude of the

association? and (3) Are there any potential moderators underlying this association? As previous research has reported a link between burnout and age (Marchand et al., 2014; Norlund et al., 2010), gender (Bekker et al., 2005; Purvanova & Muros, 2010) and type of service (Aitken & Schloss, 1994; Lernihan & Sweeney, 2010), these will be tested as potential moderators.

Method

Review Protocol

This meta-analysis has been conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta- Analyses (PRISMA; Page et al., 2020). The protocol was pre-registered on The Open Science Framework platform, prior to the database searches being carried out (Appendix A). The protocol can also be accessed at: https://osf.io/8udj3/?view_only=af133ff576f743bb967d99f97bd20fe9

Search Strategy

The current meta-analysis aimed to identify and retrieve all empirical studies that examined the relation between staff burnout and behaviours that challenge in services for people who have ID, conducted at any time, in any geographical location. A comprehensive literature search was conducted in October 2021 using four online databases: PsychINFO, MEDLINE, Scopus, and PubMed. Search terms were selected based on their use in available literature and by mapping terms to subject headings whilst searching for titles. Keywords based on variations of 'burnout', 'intellectual disability' and 'behaviours that challenge' were combined using Boolean operators (AND/OR). See Table 1 for a search syntax example (full search strategy can be found in Appendix B).

Throughout the search, no similar systematic review or meta-analysis was identified.

Table 1

Search Syntax Example

Construct	Search Terms
Burnout	Burnout OR "occupational stress" OR "emotional exhaustion" OR "compassion fatigue" OR "vicarious trauma" OR "secondary trauma"
Intellectual disability	"Learning disab*" OR "intellectual disab*" OR "developmental disab*" OR disab* OR retard* OR handicap* OR "cognitive impairment"
Behaviours that challenge	Aggress* OR "self-injur*" OR stereotyp* OR "challenging behav*" OR behav* OR anger OR "destructive behav*" OR "maladaptive behav*" OR "problem behav*"

Note. The Boolean operator * was used to identify spelling variations and word-endings. Terms were combined using AND.

Additional Papers

For unpublished literature (i.e., 'grey literature'), a search was conducted using EThOS and ProQuest: Dissertations and Theses databases. Additional checks were carried out by hand on all final included papers to identify any further relevant literature. First, the reference lists were examined for relevant titles (i.e., backward reference searching), and secondly, the studies citing the included papers were examined (i.e., forward citation searching).

Eligibility Criteria

A thorough examination of titles, abstracts, and full text articles was carried out to assess eligibility of studies. Table 2 outlines the criteria required for studies to be selected for the review.

Table 2

Eligibility Criteria for Articles in the Current Review

Inclusion Criteria	Exclusion Criteria
• Participants (i.e., professional staff) working in services for adults who have ID.	• Focused on burnout in family carers.
• Included a measure of burnout.	• Focused on staff working exclusively with children who have ID and other developmental disabilities.
• Included a measure of behaviours that challenge.	
• Reported unique effects (e.g., correlation coefficient) reflecting the association between burnout and behaviours that challenge.	• Did not report the association between burnout and behaviours that challenge.
	• Included data of staff working with adults who have ID that was collapsed with that of other groups (e.g., family carers or staff working with children). However, if they formed the majority, they were included.
• Published in English language (due to translation limitations).	
• Used a quantitative methodology.	• Used a qualitative methodology.
• Sample not replicated elsewhere.	• Book chapters (descriptive based on clinician's experiences).
	• Reviews.

Note. When samples were replicated elsewhere, the sample first reported within a published paper was included in the review. For studies examining interventions or using experimental procedures, only baseline data were considered.

Study Selection

Search results were exported from the electronic databases (.ris files) and were imported to a reference management software (EndNote Web) for removal of duplicates. The lead researcher individually screened all records identified during the search by title and abstract. Following this, the lead researcher read the full texts of all remaining studies after screening and evaluated whether they met the eligibility criteria. A sub-sample of articles was screened by a second rater at each screening stage. This included 20% of the titles and abstracts and 20% of the full text studies. The decisions of both raters were then compared. Disagreements were settled through discussions. Inter-rater

agreement was assessed using Cohen's Kappa coefficient (Cohen, 1992). Cohen's kappa is the most used statistic for assessing nominal agreement between two raters (Warrens, 2015). The descriptive classifiers suggested by Landis and Koch (1977) were selected for the interpretation of k. These are described as slight agreement (0 - .20), fair agreement (.21 - .40), moderate agreement (.41 - .60), substantial agreement (.61 - .80) and almost perfect agreement (.81 - 1). Inter-rater agreement was substantial for the title and abstracts stage (k = .64) and almost perfect for the full texts stage (k = .85). Following discussions there was perfect agreement.

Data Extraction

Data were extracted from each study using a predetermined coding sheet (Microsoft Excel). Information extracted included: (1) authors and year of publication; (2) country; (3) study design; (4) type of service; (5) sample size; (6) staff mean age; (7) percentage of male staff; (8) staff job role; (9) burnout measure; (10) measure of behaviours that challenge; (11) effects reflecting the association between burnout and behaviours that challenge; (12) service user characteristics (i.e., level of ID); (13) types of behaviours that challenge; (14) gender of units; (15) other staff characteristics (e.g., hours worked, years of experience, etc.); (16) alternative statistics. A second researcher ensured information was accurately recorded by checking a small selection of studies (20%).

Quality Assessment

The methodological quality of relevant studies was evaluated using the Effective Public Healthcare Panacea Project (EPHPP) Quality Assessment Tool for Quantitative Studies (Thomas et al., 2004; Appendix C). The EPHPP Quality Assessment Tool for Quantitative Studies consists of six sections: selection bias; study design; confounders; blinding; data collection methods; withdrawals; and dropouts. Each section is rated as either strong, moderate, or weak. Once the ratings are totalled, results lead to an overall global rating of strong (no weak ratings), moderate (one weak rating) or weak (two or more weak ratings). The EPHPP Quality Assessment Tool for Quantitative Studies has been found to have good content and construct validity and good inter-rater reliability (Thomas et al., 2004; Armijo-Olivio et al., 2012). Quality assessment of the included studies was carried out to assess

and reduce the risk of bias and to inform the reliability of the of the results. Two raters independently examined the quality of all studies. Inter-rater agreement was assessed using Cohen's Kappa coefficient (Cohen, 1992). Disagreements were resolved through discussion.

Meta-Analytic Strategy

All analyses were conducted using Comprehensive Meta-Analysis software, Version 3 (CMA; Borenstein et al., 2013). As eligible studies were anticipated to be methodologically heterogenous, a random effects meta-analysis was used to estimate the average effect size of the relationship between burnout and behaviours that challenge.

Most of the included studies provided correlations between burnout and behaviours that challenge, therefore effect sizes were extracted as correlation coefficients (r and r_s). Where studies reported multiple correlations (e.g., for physical aggression and for verbal aggression separately), a combined average was calculated for subsequent analysis (Hunter & Schmidt, 2004). One study only reported standardized β coefficients. These were converted to r, as the authors were not able to provide original correlation coefficients (in line with Peterson & Brown, 2005).

The combination of scores for the MBI (Maslach et al., 1996) can reduce the reliability of the measure and is not recommended, as each subscale is considered to be a distinct construct (Maslach et al., 2001). Therefore, correlations between each subscale of the MBI and behaviours that challenge were independently examined. Correlation coefficients are reported alongside 95% confidence intervals. Cohen's guidelines for small ($r = .10$), medium ($r = .30$) and large ($r = .50$) effect sizes, were used to interpret the effects (Cohen, 1992). CMA converts the individual correlations to Fisher's Z (see Figure 1), prior to analyses, which adjusts for bias in the r distribution (Cox, 2008).

Figure 1

Formula for the Transformation from Sample Correlation r to Fisher's z

$$z = 0.5 \times \ln\left(\frac{1+r}{1-r}\right)$$

Heterogeneity

Heterogeneity was tested, using two approaches, to determine whether moderator analyses was required. The first approach was the I-squared test statistic. The I-squared statistic estimates the percentage of variability across studies that is due to sampling error within studies (Higgins & Thompson, 2002; Higgins et al., 2003). Thresholds specified in the Cochrane Handbook describe I-squared values of 25% as low, 50% as moderate, and 75% as high heterogeneity (Higgins et al., 2021). The second approach was the Q test which assess the degree of variability among the pool of effects sizes (Card, 2012). Heterogeneity was expected to be high due to probability of methodological differences being significant across included studies.

Moderator Analyses

Moderator analyses were planned for subgroups, distinguished by categorical variables, and were only carried out if there were three or more studies per group (in line with Card, 2012). The following seven subgroup moderator variables were selected, a priori, as possible reasons for heterogeneity: (1) measure of burnout; (2) measure of behaviours that challenge; (3) type of service; (4) professional role; (5) types of behaviours that challenge; (6) study quality; and (7) publication status (as larger effects have been found in published studies; Boland et al., 2017). Studies within each categorical subgroup were aggregated using a random-effects model and subgroups were compared using the Q-test (Borenstein et al., 2009).

Meta-regression analysis was planned for continuous variables and was only carried out when there was a minimum of 10 studies. Five continuous moderator variables were selected a priori and included: (1) staff age; (2) staff gender (represented as the proportion of males); (3) number of years working in services for people who have ID; (4) number of years in professional role; and (5) year of publication.

A number of steps were taken to protect against false-positive significance tests, due to the likelihood of false-positives increasing as the number of moderator variables increase (Deeks et al., 2019). Firstly, Bonferroni adjustments were applied for the subgroup and meta-regression analysis

separately. Secondly, moderator variables were selected a priori and were pre-specified in the literature review protocol as suggested by Thompson & Higgins (2002).

Publication Bias

Where multiple approaches are used together the Type 1 error in assessing publication bias can be reduced (Card, 2012; Ferguson & Brannick, 2012). Therefore, publication bias was initially assessed via funnel plot to visualise effect size plotted against standard error (Light & Pillemer, 1984). It was also statistically assessed using Egger's regression test (Egger et al.,1997), and the fail-safe N using the Rosenthal (1979) method. Trim-and-fill method is a form of sensitivity analysis, and it was used to correct asymmetry (Duval & Tweedie, 2000).

Results

Search Results

The systematic search of all electronic databases produced 894 results. Of these, 320 were duplicate references. All remaining references (574) were screened by title and abstract, and 37 papers were identified for full text review. Two papers were not available through the lead researcher's institution. The corresponding authors were contacted to request access; however, no responses were received and therefore the studies were excluded. From the remaining 35 papers, 22 were excluded upon review. A second author was contacted via email to provide information regarding effect sizes, though he was unable to provide them (Chung & Corbett, 1998). This paper was subsequently only included in the narrative synthesis. Furthermore, it was unclear whether two papers utilised the same sample. The authors of these papers were contacted for clarification; however, a response was not received. As a result, following discussion between two reviewers, it was decided to only include the sample first reported within a published paper on the grounds that the data appeared to be concatenated. See Appendix D for details of excluded studies.

Through forward citation and backward reference searching a further two eligible papers were identified. Finally, one paper was identified through grey literature. All these papers (k = 15) were

included in the narrative synthesis, and 13 of these were included in the meta-analyses. A PRISMA

flow diagram (Page et al., 2020) summarising the selection process is shown in Figure 2.

Figure 2

PRISMA Diagram Summarising Screening Procedure
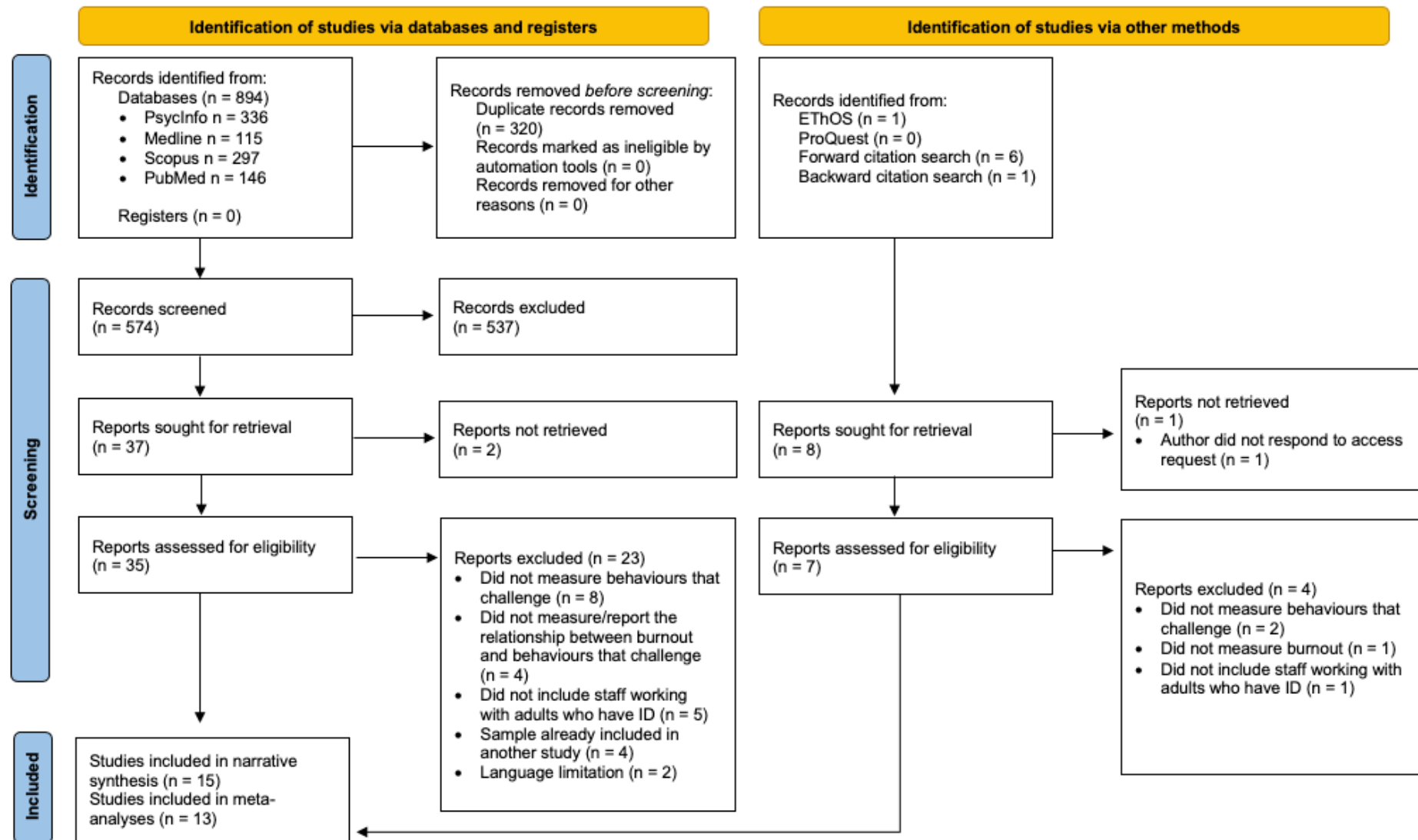
Quality Assessment

All included studies (k = 15) were rated independently by two researchers using the EPHPP Quality Assessment Tool for Quantitative Studies (Thomas et al., 2004). Twelve of the included studies were rated as moderate (Bartholomew, 2014; Chung & Corbett, 1998; Chung & Harding, 2009; de Loof et al., 2018; Hensel at al., 2012; Howard et al., 2009; Kile, 2014; Klaver et al., 2021; Mills & Rose, 2011; Shead et al., 2016; Smyth et al., 2015; Vassos & Nankervis, 2012) and two as weak (Fynn et al., 2018; Mutkins et al., 2011). Only one study was rated as strong (Nevil et al., 2021). This was largely due to majority of studies (k = 13) employing a cross-sectional study design with the exceptions of Flynn et al. (2018) and Nevill et al. (2021). 'Withdrawals and drop-outs' were not assessed for cross-sectional studies. The section most frequently characterised as strong (k = 11) was 'selection bias'. Four studies (Flynn et al., 2018; Mutkins et al., 2011; Shead et al., 2016; Vassos & Nankervis, 2012) achieved a moderate selection bias rating. Flynn et al. (2018) received a weak rating due to including a high number (47.1%) of staff who held a managerial role without describing their current patient contact. Mutkins et al. (2011) and Shead et al. (2016) received weak ratings due to low response rates, 25% and 43% respectively. Additionally, Vassos & Nankervis (2012) received a moderate rating due to including staff who did not work exclusively with adults who have ID. Overall, studies were mainly scored down for the 'confounders' section, for not clearly reporting potentially relevant confounders, such as the number of years staff worked in services for people who have ID, or the number of years staff held their current role. Nine studies were rated as strong for the 'data collection method' section (Bartholomew, 2014; Corbett & Chung, 1998; Chung & Harding, 2009; Kile, 2014; Klaver et al., 2021; Mills & Roses, 2011; Nevill et al., 2021; Smyth et al., 2015; Vassos & Nankervis, 2012) and the remaining five were rated as moderate due to utilising non-validated assessment tools for the measure of behaviours that challenge. Initial agreement between the two raters was 73.33% (k = .375; fair agreement). After discussions, final agreement was 100%. All findings, regardless of quality, were included in the analysis to remain inclusive. Appendix E presents full details of the quality assessment.

Narrative Synthesis

Study Characteristics

Table 3 summarises the study characteristics of the 15 included studies. Table 4 summarises the participant (i.e., staff) characteristics of each study. Studies were conducted across a number of countries including the United Kingdom (k = 8), Australia (k = 2), Canada (k = 1), Ireland (k = 1), the Netherlands (k = 2) and the United States (k = 1). Studies were published between 1998 and 2021 with 12/15 being published in the last ten years (not including Chung & Corbett, 1998; Chung & Harding, 2009; Howard et al., 2009). In terms of design, 13 studies were cross-sectional, one was a cohort study (Nevill et al., 2021) and one study was part of a randomised control trial (RCT; Flynn et al., 2018).

Collectively, studies included 3557 staff. However, only 3041 staff were included in the 'emotional exhaustion' meta-analysis, 2271 in the 'depersonalisation' meta-analysis and 2272 in the 'personal accomplishment' meta-analysis. It is therefore important to note that the following demographic information is representative of the total study samples as this is all that was reported in the papers. Ages ranged from 17-72 years. For 14 of the included studies (n = 3471) the mean age was 39.06 years. One study did not report the mean age of the included staff (Nevill et al., 2021). Across all studies, there was a female majority (74.32%).

Nine studies (n = 970) provided information regarding the mean number of years staff had held their current role (M = 4.141; Bartholomew, 2014; Chung & Corbett, 1998; Chung & Harding, 2009; de Loof et al., 2018; Flynn et al., 2018; Howard et al., 2009; Kile, 2015; Mills & Rose, 2011; Shead et al., 2016). Ten studies (n = 2344) provided information regarding the mean number of years staff had worked in ID services (M = 8.31; Bartholomew, 2014; Chung & Harding, 2009; Flynn et al., 2018; Howard et al., 2009; Kile, 2015; Klaver et al., 2021; Mills & Rose, 2011; Shead et al., 2016; Smyth et al., 2015; Vassos & Nankervis, 2012). Two studies included participants (i.e., staff) who were solely nursing staff (Chung & Corbett, 1998; de Loof et al., 208), whilst all remaining studies included staff from multiple professions.

Table 3

Study Characteristics

Authors (year)	Country	Study design	Number of staff [†] (n)	Burnout measure	Behaviours that challenge measure	Types of behaviours that challenge
Bartholomew (2014)	United Kingdom	Cross-sectional	n = 68	The Maslach Burnout Inventory – Human Services Survey (Maslach & Jackson, 1986)	The aggressive/ destructive behaviour subscale of the Behaviour Problem Inventory (Rojahn et al., 2001)	▪ Aggression ▪ Destruction
Chung, & Corbett (1998)	United Kingdom	Cross-sectional	n = 38	The Maslach Burnout Inventory (Maslach & Jackson, 1986)	Aberrant Behaviour Checklist (Aman et al., 1985)	▪ Irritability ▪ Agitation ▪ Crying ▪ Lethargy ▪ Social withdrawal ▪ Stereotypic behaviour ▪ Hyperactivity ▪ Non-compliance ▪ Inappropriate speech

Authors (year)	Country	Study design	Number of staff [†] (n)	Burnout measure	Behaviours that challenge measure	Types of behaviours that challenge
Chung & Harding (2009)	United Kingdom	Cross-sectional	EE (n = 101) DP (n = 101) PA (n = 99)	The Maslach Burnout Inventory (Maslach & Jackson, 1986)	Aberrant Behaviour Checklist (Aman et al., 1985)	▪ Irritability ▪ Agitation ▪ Crying ▪ Lethargy ▪ Social withdrawal ▪ Stereotypic behaviour ▪ Hyperactivity ▪ Non-compliance ▪ Inappropriate speech

Authors (year)	Country	Study design	Number of staff [†] (n)	Burnout measure	Behaviours that challenge measure	Types of behaviours that challenge
de Loof et al. (2018)	The Netherlands	Cross-sectional	n = 105	The Dutch version of The Maslach Burnout Inventory (Maslach et al., 1996)	4- item measure on frequency and intensity of aggressive behaviour (rated 1-10)	▪ Verbal aggression ▪ Physical aggression ▪ Aggression against objects ▪ Auto-aggression ▪ Sexual aggression
Flynn et al. (2018)	United Kingdom	RCT	n = 186	The Maslach Burnout Inventory (Maslach et al., 1996)	Incidents of aggressive challenging behaviour	▪ Aggressive challenging behaviour

Authors (year)	Country	Study design	Number of staff [†] (n)	Burnout measure	Behaviours that challenge measure	Types of behaviours that challenge
Hensel et al. (2012)	Canada	Cross-sectional	n = 926	The Maslach Burnout Inventory – Human Services Survey (Maslach et al., 1996)	Standardised exposure to aggression score (Hastings & Brown, 2002)	▪ Aggression towards staff or clients ▪ Self-injurious aggression ▪ Property aggression
Howard et al. (2009)	United Kingdom	Cross-sectional	n = 85	The Maslach Burnout Inventory (Maslach & Jackson, 1993)	Actual level of violence	▪ Aggressive physical contact ▪ Threats of violence ▪ Verbal aggression

Authors (year)	Country	Study design	Number of staff [†] (n)	Burnout measure	Behaviours that challenge measure	Types of behaviours that challenge
Kile (2014)	United Kingdom	Cross-sectional	n = 222	The Maslach Burnout Inventory – Human Services Survey (Maslach et al., 1996)	The aggressive/ destructive behaviour subscale of the Behaviour Problem Inventory – Short Form (Rojahn et al., 2001)	▪ Verbal aggression ▪ Bullying ▪ Grabbing ▪ Destroying ▪ Hitting ▪ Pinching ▪ Pushing ▪ Biting ▪ Scratching ▪ Kicking
Klaver et al. (2021)	The Netherlands	Cross-sectional	EE (n = 765)	The Dutch version of The Maslach Burnout Inventory (Maslach et al., 1996)	Irritability subscale of the Aberrant Behaviour Checklist (Aman et al., 1985)	▪ Irritability ▪ Agitation ▪ Crying

Authors (year)	Country	Study design	Number of staff [†] (n)	Burnout measure	Behaviours that challenge measure	Types of behaviours that challenge
Mills & Rose (2011)	United Kingdom	Cross-sectional	EE (n = 74) DP (n = 74) PA (n = 73)	The Maslach Burnout Inventory (Maslach et al., 1996)	The Checklist of Challenging Behaviour (Harris et al., 1994)	▪ Aggressive behaviours
Mutkins et al. (2011)	Australia	Cross-sectional	n = 80	The Maslach Burnout Inventory – Human Services Survey (Maslach et al., 1996)	Single item measure of exposure to challenging client behaviour (Hastings & Brown, 2002)	▪ Threats ▪ Actual violence ▪ Property damage ▪ Self-injurious behaviour ▪ Screaming ▪ Sexual behaviour

Authors (year)	Country	Study design	Number of staff [†] (n)	Burnout measure	Behaviours that challenge measure	Types of behaviours that challenge
Nevill et al. (2021)	United States	Cohort	n = 64	Maslach Burnout Inventory – Human Services Survey (Maslach et al., 1997)	The Adult Scale of Hostility and Aggression (Matlock & Aman, 2011)	▪ Verbal aggression ▪ Physical aggression ▪ Covert aggression ▪ Hostile affect ▪ Bullying
Shead et al. (2016)	United Kingdom	Cross-sectional	n = 86	Abbreviated Maslach Burnout Inventory (Maslach & Jackson, 1993)	Violence Scale (Howard et al., 2009)	▪ Aggressive contact ▪ Threats of violence ▪ Verbal aggression

Authors (year)	Country	Study design	Number of staff [†] (n)	Burnout measure	Behaviours that challenge measure	Types of behaviours that challenge
Smyth et al. (2015)	Ireland	Cross-sectional	n = 138	The Maslach Burnout Inventory – Human Services Survey (Maslach et al., 1996)	The aggressive/ destructive behaviour subscale of the Behaviour Problem Inventory (Rojahn et al., 2001)	▪ Aggressive behaviour ▪ Destructive behaviour
Vassos & Nankervis (2012)	Australia	Cross-sectional	EE (n = 103) DP (n = 98) PA (n = 102)	The Maslach Burnout Inventory – Human Services Survey (Maslach & Jackson, 1986)	The client challenging behaviour subscale of the Staff Stressor Questionnaire (Hatton et al., 1999)	▪ Unpredictable challenging behaviour ▪ Self-injury ▪ Destruction of property ▪ Injury to others ▪ Inappropriate sexual behaviour ▪ Stereotyped behaviour

Note. NR, not reported. SD, standard deviation. EE, Emotional Exhaustion. DP, Depersonalisation. PA, Personal Accomplishment.

† This refers to the number of staff included in each individual analysis and may not correspond with the study's total number of participating staff.

Where the number of staff differs for each analysis, that number is reported separately.

Table 4

Participant (i.e., staff) Characteristics †

Authors (year)	Total number of staff	% Male	Mean age (SD) [range]	Job role	Mean years in role (SD) [range]	Mean years working in ID services (SD) [range]	Setting	Client level of ID
Bartholomew (2014)	68	8%	36.82 (SD =10.25) [20-60]	▪ Direct care staff	3.54	7.38	▪ Residential and community-based teams ▪ Community residential group homes ▪ Inpatient unit	NR
Chung, & Corbett (1998)	38	31.57%	35.5	▪ Nursing staff	5.5	NR	▪ Hospital-based bungalows ▪ Community unit (residential care)	NR

Authors (year)	Total number of staff	% Male	Mean age (SD) [range]	Job role	Mean years in role (SD) [range]	Mean years working in ID services (SD) [range]	Setting	Client level of ID
Chung & Harding (2009)	103	30%	37.51 (SD = 10.97)	▪ Care staff	4.67 (SD = 4.81)	7.73 (SD = 7.56)	▪ Residential community homes	NR
de Loof et al. (2018)	105	41%	35.2 (SD = 9.7) [21-59]	▪ Nursing staff	4.2 (SD = 3.9)	NR	▪ Forensic psychiatric hospitals	NR
Flynn et al. (2018)	186	22%	40 (SD = 11.5)	▪ Coordinators ▪ Managers ▪ Leader roles ▪ Support workers ▪ Assistant psychologist	2.4 [1 - 7]	10 [5.3 - 15]	▪ Residential care homes ▪ Supported living services	NR

Authors (year)	Total number of staff	% Male	Mean age (SD) [range]	Job role	Mean years in role (SD) [range]	Mean years working in ID services (SD) [range]	Setting	Client level of ID
Hensel et al. (2012)	926	17.7%	39.7 (SD = 11.1)	▪ Direct support providers	NR	NR	▪ Residential and respite programmes ▪ Day programmes ▪ Supported independent living environments	NR
Howard et al. (2009)	85	42.7%	40 (SD = 11.45) [18 - 62]	▪ Direct care staff	3.62	3.63	▪ Residential services	All levels of ID
Kile (2014)	222	37.4%	38.66 (SD = 13.80) [20 - 72]	▪ Direct care staff	3.62 (SD = 4.51) [0 - 28]	6.77 (SD = 7) [0 - 41.08]	▪ Community-based residential services	NR

Authors (year)	Total number of staff	% Male	Mean age (SD) [range]	Job role	Mean years in role (SD) [range]	Mean years working in ID services (SD) [range]	Setting	Client level of ID
Klaver et al. (2021)	1271	11.4%	37.6 (SD = 11.17) [17 - 66]	▪ Direct care staff	NR	14 (SD = 9.62) [0 - 50]	▪ Day and residential services	NR
Mills & Rose (2011)	77	29.87%	37 (SD = 11.89) [18 - 62]	▪ Support workers ▪ Qualified nursing staff ▪ Managerial positions ▪ Other disciplines (psychology, occupational therapy, and social work)	5.16 (SD = 6.27) [0 - 23.25]	8.41 (SD = 8.15) [0 - 32.25]	▪ Residential homes	NR
Mutkins et al. (2011)	80	27%	45.64 (SD = 9.84)	▪ Direct support staff ▪ Management/ administrative personnel	NR	NR	▪ Community settings (group homes, drop-in support, day programmes and supported employment)	NR

Authors (year)	Total number of staff	% Male	Mean age (SD) [range]	Job role	Mean years in role (SD) [range]	Mean years working in ID services (SD) [range]	Setting	Client level of ID
Nevill et al. (2021)	64	26%	[18 - 60+]	▪ Direct support professionals	NR	NR	NR	All levels of ID
Shead et al. (2016)	86	36.05%	39.7 (SD = 13.7) [21 - 63]	▪ Support workers ▪ Senior support workers ▪ Managers ▪ Psychologists ▪ Occupational therapists ▪ Psychiatrists ▪ Speech and language therapists ▪ Teachers ▪ Nurses ▪ Social workers	4.56 (SD = 5.37) [0 - 32.08]	6.36 (SD = 5.97) [0 - 32.08]	▪ Residential setting	NR

Authors (year)	Total number of staff	% Male	Mean age (SD) [range]	Job role	Mean years in role (SD) [range]	Mean years working in ID services (SD) [range]	Setting	Client level of ID
Smyth et al. (2015)	138	30.43%	41.4 (SD = 12.53) [19 - 68]	▪ Support staff	NR	8.1 (SD = 8.4) [0 - 41]	▪ Residential community homes	NR
Vassos & Nankervis (2012)	108 (72% of staff worked with adults with an ID)	20.37%	41.61 (SD = 11.81)	▪ Disability support workers	NR	10.75 (SD = 8.69) [0 - 50]	▪ Supported accommodation ▪ Outreach ▪ Day programmes ▪ Respite ▪ Other settings	NR

Note. ID, Intellectual Disability. NR, not reported. SD, standard deviation.

† Results reflect the total number of staff included in the study and therefore may not represent the sample included in the analysis.

Only two studies provided information regarding the levels of clients' ID (Howard et al., 2009; Nevill et al., 2021). In terms of the types of behaviours that challenge, eight studies looked solely at aggressive/destructive behaviours (Bartholomew, 2014; Flynn et al., 2018; Howard et al., 2009; Kile, 2014; Mils & Rose, 2011; Nevill et al., 2021; Shead et al., 2016; Smyth et al., 2015), and the remaining seven looked at multiple behaviours (e.g., aggression, self-injury, stereotypy).

Settings

Seven studies recruited staff working solely in residential services (Chung & Harding, 2009; Flynn et al., 2018; Howard et al., 2009; Kile, 2014; Mills & Rose, 2011; Shead et al., 2016; Smyth et al., 2015). One study did not report the type of service staff were recruited from (Nevill et al., 2021). The remaining studies recruited staff from various services including inpatient units, forensic psychiatric hospitals, day programmes/services, drop-in support services, supported employment services, outreach and other services not specified.

Measures

All of the studies utilised a version of the MBI to assess burnout. Most (k = 12) utilised the original MBI, one study (Shead et al., 2016) utilised the Abbreviated MBI (Maslach & Jackson, 1993) and two studies (de Loof et al., 2018; Klaver et al., 2021) utilised the Dutch version of the MBI (Maslach et al., 1996). In terms of measuring behaviours that challenge, nine studies used full or part of validated measures (Bartholomew, 2014; Chung & Corbett, 1998; Chung & Harding, 2009; Kile, 2014; Klaver et al., 2021; Mills & Rose, 2011; Nevill et al., 2021; Smyth et al., 2015; Vassos & Nankervis, 2012). Only three of these studies utilised the full measures, which included the Aberrant Behaviour Checklist (Aman et al., 1985; in Chung & Corbett, 1998; Chung & Harding, 2009) and the Adult Scale of Hostility and Aggression (Matlock & Aman, 2011; in Nevill et al., 2012). Six studies utilised subscales from validated measures. These included the Irritability Subscale of the Aberrant Behaviour Checklist (Aman et al., 1985; Klaver et al., 2011); the Aggressive/Destructive Behaviour subscale of the Behaviour Problems Inventory (Rojahn et al., 2001; in Bartholomew, 2014; Kile, 2015; Smyth et al., 2015); the Checklist of Challenging Behaviour (Harris et al., 1994; in Mills &

Rose, 2011), and the Client Challenging Behaviour subscale of the Staff Stressor Questionnaire (Hatton et al., 1999; in Vassos & Nankervis, 2012).

Six studies utilised non-validated measures for assessing behaviours that challenge (de Loof et al., 2018; Flynn et al., 2018; Hensel et al., 2012; Howard et al., 2009; Mutkins et al., 2011; Shead et al., 2016). Two of these studies used a Violence Scale (Howard et al., 2009; Shead et al., 2016), one study utilised a standardised exposure to aggression score (Hensel et al., 2012), one study used a four-item measure of frequency and intensity of behaviours that challenge (de Loof et al., 2018), one study used a single item measure looking at the number of incidents of behaviours that challenge (Flynn et al., 2018) and, one study used a single item measure of exposure to behaviours that challenge (Mutkins et al., 2011).

Power Analysis

Most of the included studies (k = 9) did not conduct a power analysis (Chung & Corbett, 1998; Chung & Harding, 2009; Flynn et al., 2018; Hensel et al., 2012; Howard et al., 2009; Klaver et al., 2021; Mills & Rose, 2011; Smyth et al., 2015; Vassos & Nankervis, 2012). Three studies carried out a priori power calculations using G*Power (Faul et al., 2007; Faul et al., 2009) with an alpha level of .05, power of .80 and a medium effect size (Kile, 2014; Mutkins et al., 2011; Shead et al., 2016). One study carried out a priori power calculations using G*Power (Faul et al., 2007), with an alpha level of .05 and a medium effect size, however, power was set at .95 (de Loof et al., 2018). Two studies did not describe their method of power calculation (Bartholomew, 2014; Nevill et al., 2021).

Further Data Analyses

Only five studies looked at whether behaviours that challenge predicted burnout [emotional exhaustion (k = 5); depersonalisation (k = 4); personal accomplishment (k = 4)]. All five studies found that greater exposure to behaviours that challenge significantly predicted emotional exhaustion (Chung & Harding, 2009; Klaver et al., 2021; Shead et al., 2016; Smyth et al., 2015; Vassos & Nankervis, 2012). Three studies found that greater exposure to behaviours that challenge was a significant predictor of depersonalisation (Klaver et al., 2021; Shead et al., 2016; Smyth et al., 2015;

Vassos & Nankervis, 2012). Only one study did not find behaviours that challenge to be a predictor of depersonalisation (Chung & Harding, 2009). Finally, only one study found behaviours that challenge to negatively predict personal accomplishment (Chung & Harding, 2009).

One study (de Loof et al., 2018) found job stress mediated the relationship between behaviours that challenge and burnout (i.e., emotional exhaustion and depersonalisation).

Regarding moderators, agreeableness (Chung & Harding, 2009), self-efficacy (Howard et al., 2009), client reciprocity (Kile, 2014) and stress management skills (de Loof et al., 2018) were found to be significant moderators of the relationship between emotional exhaustion and behaviours that challenge. Additionally, client reciprocity, organisational reciprocity (Kile, 2014) and stress management skills (de Loof et al., 2018) were found to be significant moderators of the relationship between behaviours that challenge and depersonalisation. Finally, neuroticism and extraversion were found to moderate the impact of behaviours that challenge on personal accomplishment (Chung & Harding, 2009).

Reported Limitations

All studies (k = 15) included a discussion of their limitations. Most commonly cited limitations included the use of a cross-sectional study design, the use of self-reported data, small sample sizes, low response rates, self-selection of participants, lack of generalisability of the results, possibility of other causal explanations not measured, lack of exploration of other potentially relevant individual and organisational factors, issues with the measurement of behaviours that challenge, lack of covariates and limitations regarding the reliability of the measures. One study (Mills & Rose, 2011) also included a discussion of limitations relating to the overlap between the constructs which were measured.

Meta-Analyses

As all the included studies (k = 13) utilised versions of the MBI, each of the three subscales of the MBI had a primary meta-analysis (i.e., 'emotional exhaustion', 'depersonalisation', 'personal accomplishment'). However, one study (Klaver et al., 2021) only reported effect sizes for the

emotional exhaustion subscale of the MBI, and thus it was excluded from the 'depersonalisation' and 'personal accomplishment' meta-analyses. A summary of the primary meta-analyses is shown in Table 5.

Emotional Exhaustion

A small positive effect size was observed between emotional exhaustion and behaviours that challenge (r = .217; CIs: [.149 - .28]; Z = 6.148, p < .001). The findings suggest that emotional exhaustion is associated with an increase in behaviours that challenge. Effect sizes ranged from r = -.09 to r = .52 (see Figure 3). One study reported a negative correlation between emotional exhaustion and behaviours that challenge (Mutkins et al., 2011), although this was not significant. Significant study heterogeneity was evident (moderate) (I^2 = 64.07%; Q [df = 12] = 33.401, p > .001).

Publication Bias. Visual examination of the funnel plot (see Figure 4) showed some asymmetry, indicating risk of publication bias. In contrast, the Egger's test was non-significant b_0 = .31 [−1.944, 2.564], t (11) = .303, p = .767 supporting the absence of publication bias. Trim and fill analysis corrected for asymmetry by imputing 2 studies to the right of the mean, however, the overall effect did not significantly change (r = .232; CIs: [.198, .264]; see Appendix F). The fail-safe N indicating the number of additional studies with a mean effect of zero that would be needed to increase the P value above .05 was N = 353. These findings suggest no evidence of publication bias in this meta-analysis.

Table 5

Findings from the Primary Meta-Analyses.

Subscale	k	ES	Lower	Upper	p	I^2	Q
Emotional exhaustion	13	.217	.149	.283	< .001	64.073	33.401
Depersonalisation	12	.140	.071	.207	< .001	50.388	22.172
Personal accomplishment	12	.021	- .021	.064	.328	76.03	45.883

Note. ES, effect size (r)

Figure 3

Forest Plot for Emotional Exhaustion Meta-Analysis

Meta Analysis

Study name	Statistics for each study					Correlation and 95% CI
	Correlation	Lower limit	Upper limit	Z-Value	p-Value	
Bartholomew	0.133	-0.109	0.360	1.079	0.281	
Chung & Harding	0.420	0.247	0.567	4.477	0.000	
de Loof et al.	0.152	-0.041	0.334	1.547	0.122	
Flynn et al.	0.068	-0.077	0.210	0.921	0.357	
Hensel et al.	0.194	0.131	0.255	5.970	0.000	
Howard et al.	0.201	-0.013	0.397	1.845	0.065	
Kile	0.170	0.039	0.295	2.540	0.011	
Klaver et al.	0.229	0.161	0.295	6.436	0.000	
Mills & Rose	0.364	0.148	0.547	3.214	0.001	
Mutkins et al.	-0.090	-0.304	0.132	-0.792	0.428	
Shead et al.	0.228	0.017	0.420	2.114	0.034	
Smyth et al.	0.202	0.036	0.357	2.380	0.017	
Vassos & Nankervis	0.520	0.363	0.648	5.763	0.000	
	0.217	0.149	0.283	6.148	0.000	

-1.00   -0.50   0.00   0.50   1.00

Favours A   Favours B

Meta Analysis

Figure 4

Funnel Plot for Emotional Exhaustion Meta-Analysis
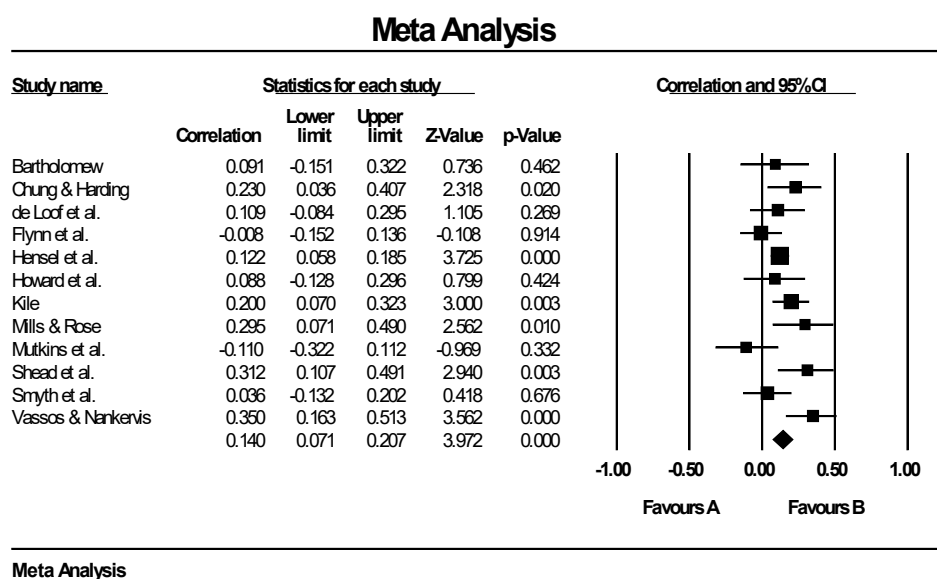

Funnel Plot of Standard Error by Fisher's Z
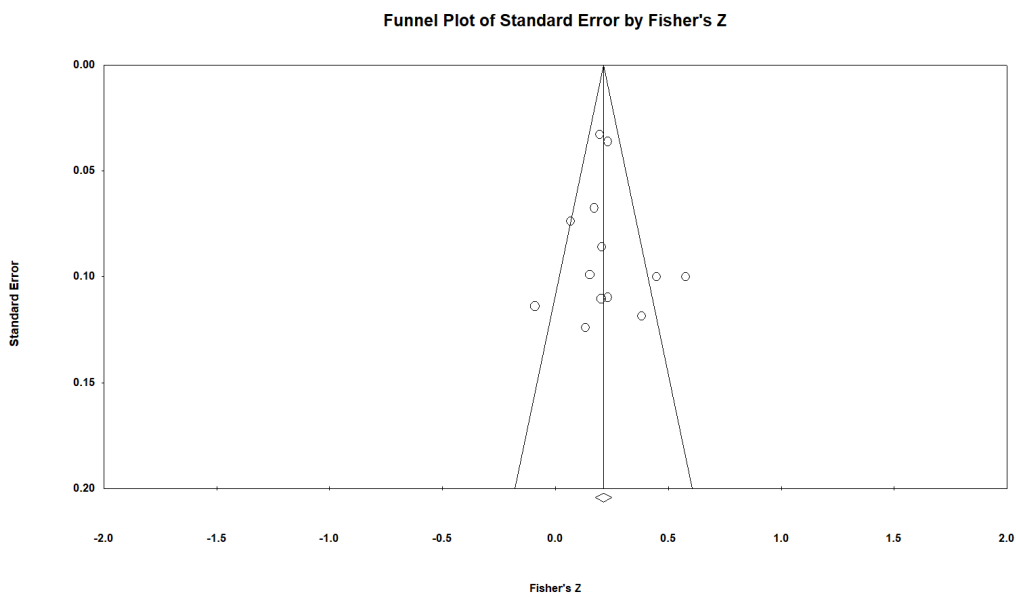
Note. ○ Observed studies. ◇ Observed summary effect.

Depersonalisation

A small positive effect size was observed between depersonalisation and behaviours that challenge ($r =.14$; CIs: [.071- .207]; $Z = 3.972$, $p < .001$). The findings suggest that depersonalisation is associated with an increase in behaviours that challenge. Effect sizes ranged from $r = - .11$ to $r = .350$ (see Figure 5). Two studies reported a negative correlation between depersonalisation and behaviours that challenge (Flynn et al., 2018 and Mutkins et al., 2011), although these were not significant. Significant study heterogeneity was evident (moderate) ($I^2 = 50.38\%$; Q [df = 11] = 22.172, $p < .001$).

Figure 5

Forest Plot for Depersonalisation Meta-Analysis

Study name	Correlation	Lower limit	Upper limit	Z-Value	p-Value
Bartholomew	0.091	-0.151	0.322	0.736	0.462
Chung & Harding	0.230	0.036	0.407	2.318	0.020
de Loof et al.	0.109	-0.084	0.295	1.105	0.269
Flynn et al.	-0.008	-0.152	0.136	-0.108	0.914
Hensel et al.	0.122	0.058	0.185	3.725	0.000
Howard et al.	0.088	-0.128	0.296	0.799	0.424
Kile	0.200	0.070	0.323	3.000	0.003
Mills & Rose	0.295	0.071	0.490	2.562	0.010
Mutkins et al.	-0.110	-0.322	0.112	-0.969	0.332
Shead et al.	0.312	0.107	0.491	2.940	0.003
Smyth et al.	0.036	-0.132	0.202	0.418	0.676
Vassos & Nankervis	0.350	0.163	0.513	3.562	0.000
	0.140	0.071	0.207	3.972	0.000

Publication Bias. Visual examination of the funnel plot (see Figure 6) showed some asymmetry, indicating risk of publication bias. However, the Egger's test was non-significant $b_0 = .452$ [−1.69, 2.595], $t(10) = .47$, $p = .648$ supporting the absence of publication bias. Trim and fill analysis was carried out to correct for asymmetry, however, no studies were imputed ($r = .131$; CIs: [.09, .173]; Appendix G). The fail-safe N indicated that the number of additional studies with a mean effect of zero that would be needed to increase the P value above .05 was N = 94. These findings suggest no evidence of publication bias in this meta-analysis.

Figure 6

Funnel Plot for Depersonalisation Meta-Analysis

Funnel Plot of Standard Error by Fisher's Z
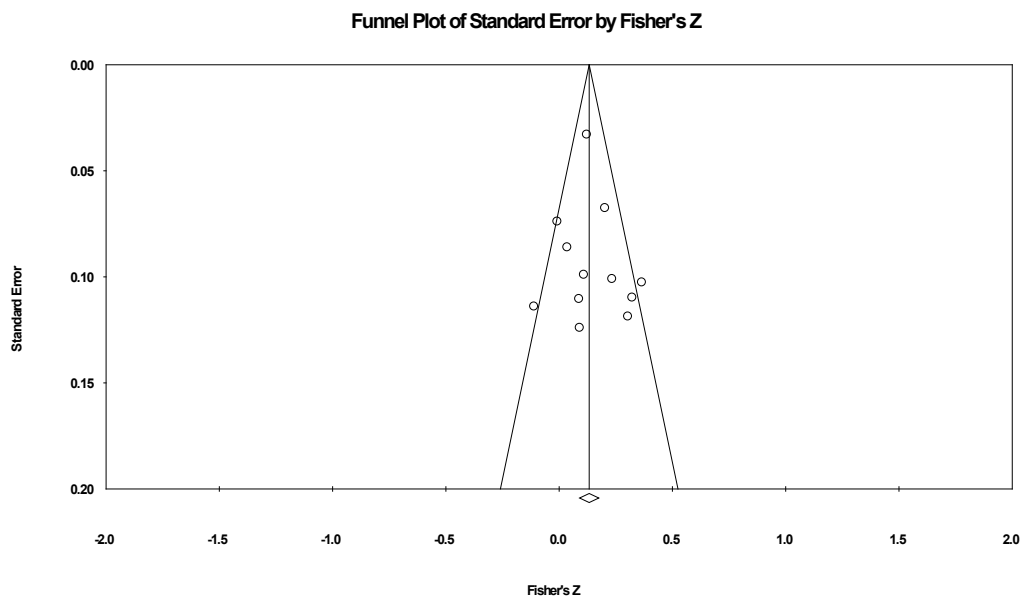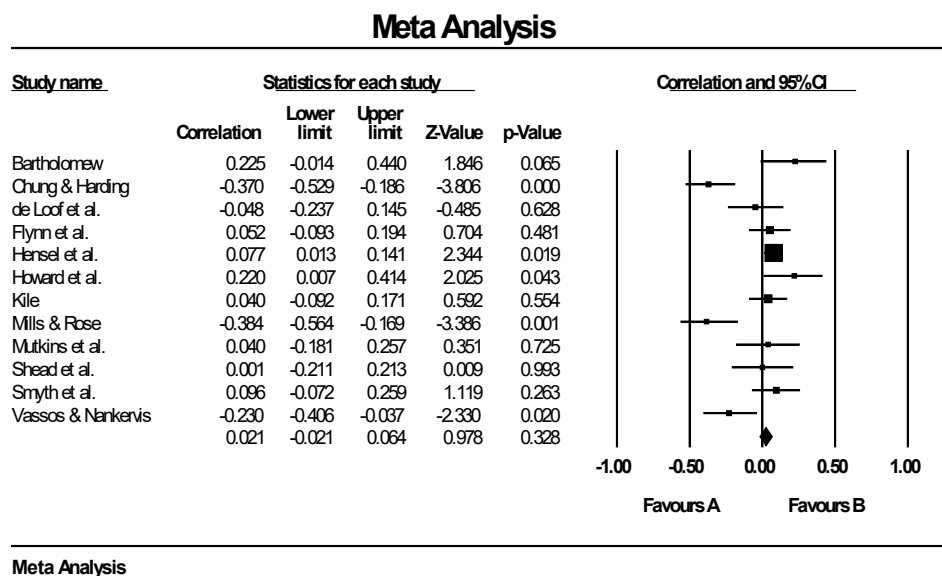
Note. ○ Observed studies. ◇ Observed summary effect.

Personal Accomplishment

The findings suggest that personal accomplishment is not associated with behaviours that challenge (r = - .021; CIs: [- .021 - .064]; Z = .978, p = .328). Effect sizes ranged from r = - .384 to r = .225 (see Figure 7). Significant study heterogeneity was evident (high) (I^2 = 76.03%; Q [df =11] = 45.883, p < .001).

Publication Bias. Visual examination of the funnel plot (see Figure 8) showed some asymmetry, indicating risk of publication bias, however the Egger's test was non-significant b_0 = - 1.729 [−4.599, 1.139], t (10) = 1.344, p = .21. Trim and fill analysis corrected for asymmetry by imputing 1 study to the left of the mean, however, the overall effect did not significantly change (r = .011; CIs: [- .03, .053]; see Appendix H). The fail-safe N indicating the number of additional studies with a mean effect of zero that would be needed to increase the P value above .05 was N = 0. These findings suggest evidence of publication bias in this meta-analysis.
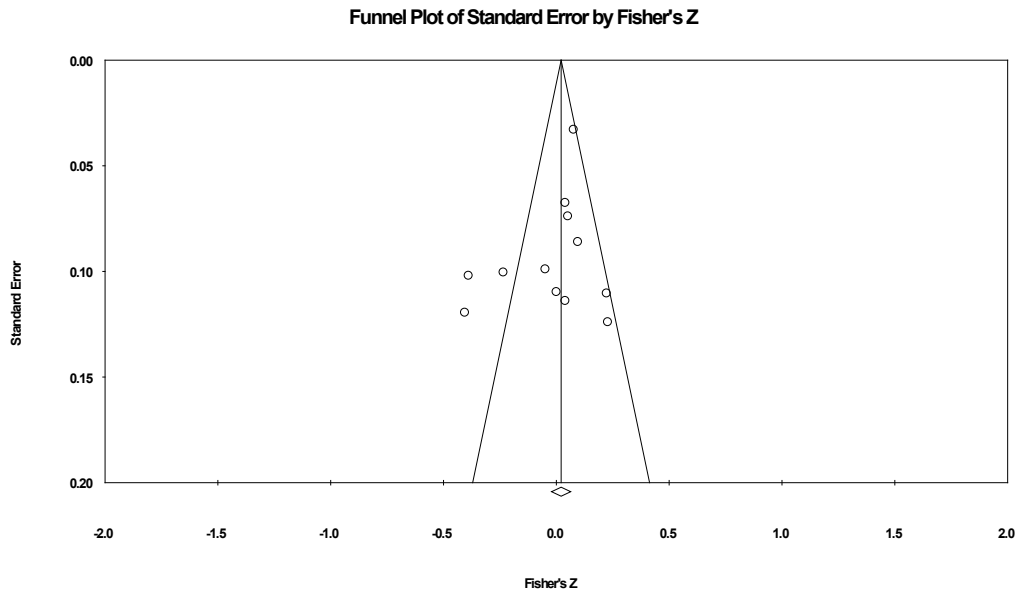
Figure 7

Forest Plot for Personal Accomplishment Meta-Analysis

Meta Analysis

Study name	Correlation	Lower limit	Upper limit	Z-Value	p-Value
Bartholomew	0.225	-0.014	0.440	1.846	0.065
Chung & Harding	-0.370	-0.529	-0.186	-3.806	0.000
de Loof et al.	-0.048	-0.237	0.145	-0.485	0.628
Flynn et al.	0.052	-0.093	0.194	0.704	0.481
Hensel et al.	0.077	0.013	0.141	2.344	0.019
Howard et al.	0.220	0.007	0.414	2.025	0.043
Kile	0.040	-0.092	0.171	0.592	0.554
Mills & Rose	-0.384	-0.564	-0.169	-3.386	0.001
Mutkins et al.	0.040	-0.181	0.257	0.351	0.725
Shead et al.	0.001	-0.211	0.213	0.009	0.993
Smyth et al.	0.096	-0.072	0.259	1.119	0.263
Vassos & Nankervis	-0.230	-0.406	-0.037	-2.330	0.020
	0.021	-0.021	0.064	0.978	0.328

Meta Analysis

Figure 8

Funnel Plot for Personal Accomplishment Meta-Analysis

Funnel Plot of Standard Error by Fisher's Z

Note. ○ Observed studies. ◇ Observed summary effect.

Sensitivity Analyses

Sensitivity analyses were conducted to examine the robustness of the significant results. Each meta-analysis was repeated excluding the study by Chung & Harding (2009), as it reported standardized β coefficients which required transformation. Additionally, each meta-analysis was repeated excluding the study of Vassos & Nankervis (2012), as the sample did not exclusively include staff who worked with individuals who have ID. All sensitivity analyses showed consistent results with the primary meta-analyses (see Appendix I).

Moderator Analyses

Subgroups

In total, seven individual categorical moderator analyses (i.e., subgroups)" were planned, however, only four were viable to carry out (see Tables 6 and 7), due to an insufficient number of studies in each group (k < 3). This included: measure of behaviours that challenge; type of MBI

measure; type of service; and type of behaviours that challenge Bonferroni adjustments were applied to each subgroup resulting in a p-value of .013 (.05 / 4).

For emotional exhaustion, measure of behaviours that challenge was found to be a significant moderator. However, this was not significant after controlling for multiple testing. No significant variation in effects was found for depersonalisation. Moderator analysis for personal accomplishment was not carried out due to the main meta-analysis not yielding a significant result.

Table 6

Subgroup (Categorical) Moderator Analyses for Emotional Exhaustion

Moderator	Level	k	Effect size (r)	95% Confidence intervals	Q	I²
Measure of	*Random effects model for Measure of BtC (Q = 5.159, p = .023) **					
behaviours	Validated	7	.288	.189 – .382	18.274**	67.167
that	Non-validated	6	.14	.059 – .22	8.16	38.729
challenge						
MBI	*Random effects model for MBI Measure (Q = .001, p = .981)*					
measure	MBI	10	.205	.162 – .247	32.652**	72.437
	Adapted MBI	3	.221	.159 – .280	.58	.000
Service	*Random effects model for Service (Q = .064, p = .800)*					
	Residential (only)	7	.225	.132 – .313	11.786	49.091
	Other	6	.207	.097 – .311	21.614**	76.867
Type of	*Random effects model for type of BtC (Q = 1.109, p = .292)*					
behaviours	Aggressive/ destructive	7	.176	.101 – .241	5.68	.000
that						
challenge	Multiple behaviours	6	.224	.183 – .264	26.266**	80.964

Note. BtC, Behaviours that challenge.

*p < .05. **Bonferroni adjustment, *p* = .013.

Table 7

Subgroup (Categorical) Moderator Analyses for Depersonalisation

Moderator	Level	k	Effect size (r)	95% Confidence intervals	Q	I^2
Measures of	*Random effects model for Measure of BtC (Q = 2.642, p = .104)*					
behaviours	Validated	6	.198	.103 – .289	7.877	36.525
that challenge	Non-validated	6	.089	- .004 – .180	10.148	50.728
Services	*Random effects model for Service (Q = .184, p = .668)*					
	Residential	7	.154	.059 – .247	12.08	50.329
	Other	5	.121	.000 – .237	9.863*	59.446
Types of	*Random effects model for type of BtC (Q = .011, p = .917)*					
behaviours	Aggressive/	7	.137	.041 – .230	11.311	46.954
that challenge	destructive					
	Multiple behaviours	5	.145	.003 – .261	10.855	63.15

Note. BtC, Behaviours that Challenge.

*p < .05. **Bonferroni adjustment, *p* = .013.

Meta-Regression

For the 'emotional exhaustion' and 'depersonalisation' meta-analyses, multivariable moderator (i.e., meta-regression) analyses were carried out for mean age, gender (percentage male), and year of publication. Additionally, for 'emotional exhaustion' years of experience in services for people who have ID was assessed. For emotional exhaustion, all meta-regression analyses were found to be non-significant indicating that the magnitude of the effects across the studies did not vary as a function of staff age, gender, year of publication or experience in services for people who have ID. Additionally, for 'depersonalisation', neither age, gender nor year of publication were significantly related to depersonalisation. See Tables 8 and 9.

Table 8

Meta-Regression Analyses for Emotional Exhaustion

Moderator	Mean (range)	k	B	CI	SE	p
Age	39.33 (17-72)	13	- .017	- .047 - .014	.015	.287
Gender (% male)	25.21 (0-100%)	13	- .000	- .007 - .006	.000	.891
Year of publication	(2009 – 2021)	13	- .011	- .032 - .01	.01	.300
Experience in ID services (years)	8.313	10	.007	- .028 - .043	.018	.672

Note. CI, confidence interval. SE, standard error. ID, intellectual disability.

Table 9

Meta-Regression Analyses for Depersonalisation

Moderator	Mean (range)	k	B	CI	SE	p
Age	39.48 (18 – 72)	12	- .02	- .049 - .008	.015	.159
Gender (% male)	26.36 (0-100%)	12	.002	- .006 - .01	.004	.665
Year of publication	(2009 -2018)	12	- .01	- .034 - .015	.013	.443

Note. CI, confidence interval. SE, standard error.

Discussion

During the last decade, research looking at the association between staff burnout and behaviours that challenge has grown; for example, twelve of the fifteen studies included in the current review were conducted in this time frame. The current review is the first meta-analysis, we are aware

of, to quantify the association between staff burnout and behaviours that challenge in services for people who have ID. The primary aim of this review was to comprehensively evaluate all available research on the association (and to what degree) between staff burnout and behaviours that challenge in services for people who have ID, and the secondary aim was to identify any potential moderators underlying this relationship.

Summary of Findings

With this meta-analysis we found that behaviours that challenge are related to two of the three dimensions of burnout, as defined by Maslach (Maslach& Jackson, 1981). Nevertheless, it remains difficult to draw definite conclusions from the studies reported here. Specifically, a small positive association was found between behaviours that challenge and emotional exhaustion ($r = .213$), with eight of the included studies finding a significant positive correlation. The majority of these studies reported a small positive association, with the exception of one which reported a moderate positive association. However, five of the included studies reported non-significant results. In terms of depersonalisation, a small positive association with behaviours that challenge was also found ($r = .136$), however, only five of the included studies found a significant positive correlation. Reasons for this disparity are unclear, although one possibility is the discrepancy between the different types of behaviours that challenge, measured in each study.

Nevertheless, the results of this meta-analysis are not surprising as various other factors have been found to influence feelings of burnout. More specifically the Job Demands-Resources Model (Bakker & Demerouti, 2007), suggests that there are two interrelated psychological processes that lead to burnout (i.e., job demands and job resources). Job demands refer to issues such role ambiguity, stressful events, workload, and work pressure, and behaviours that challenge would largely fall within this concept. On the other hand, job resources refer to issues relating to regular feedback, autonomy, social support, and supervisory relationship. This would suggest that alongside behaviours that challenge the presence of burnout in staff could also be influenced by other factors.

A second possibility for the variability within findings relates to the personal resources of staff. Previous studies have reported that individuals' coping strategies can mitigate the impact of stressful situations (Moos & Schaefer, 1993). More specifically, problem-focused coping has been found to negatively correlate with emotional exhaustion, and depersonalisation (Anderson, 2000; Ben-Zur & Michael 2007). Thus, it is possible that the relationship between behaviours that challenge and burnout may differ when accounting for individuals' personal coping skills. Further research on the role of personal resources on burnout in staff working with individuals who have ID is warranted.

In addition, no association was found between behaviours that challenge and personal accomplishment, despite five of the included studies reporting significant results. Nevertheless, these significant results were mixed with three of the included studies reporting a small negative association between personal accomplishment and behaviours that challenge, and two reporting a small positive association.

The construct of burnout itself could provide a tentative explanation for the lack of significant results between personal accomplishment and behaviours that challenge. While Maslach defined burnout as a three-dimensional construct, other studies do not require all three components to define burnout (Eckleberry-Hunt et al., 2018). Previous research has also suggested that the dimension of personal accomplishment may be independent from the emotional exhaustion and depersonalisation constructs (Schaufeli & Bakker, 2004). It is therefore possible that differences in personal accomplishment do not reflect an individual's reaction to negative work events, such as working with behaviours that challenge, and instead reflect their personal characteristics.

Regarding the secondary aim of the review, no significant variation in effects were found for emotional exhaustion and depersonalisation, based on the tested moderators. However, these findings should be considered in the context of a number of limitations.

Limitations of Existing Research

The included studies encompassed staff from a range of occupational backgrounds and settings. Additionally, studies were carried out in various geographical locations which increases the

generalisability of the results. However, behaviours that challenge are a socially constructed concept which could lead to a lack of conceptual clarity. Additionally, the methods of measuring behaviours that challenge and the types of behaviours that challenge that were measured, varied significantly between studies creating inconsistencies between papers. Approximately half of the included studies compared burnout scores to aggressive and destructive behaviours, whereas the remaining studies combined aggressive behaviours with self-injurious and stereotyped behaviours. Consequently, this could in turn reduce the reliability of the results and the generalisability across cultures or settings.

The heterogeneity of the included studies is further compounded by the lack of reporting regarding the level of ID amongst the individuals the staff worked with. Only two of the included studies described staff working with all levels of ID. This raises an issue, as behaviours that challenge have been found to be more pervasive in individuals with profound intellectual disabilities (Ali et al., 2014). Hence, the poor reporting of data across studies makes strong conclusions difficult and results cannot be extrapolated across staff working with profound levels of ID.

In addition, across the 15 papers reported here it is unclear, from the study methodologies, whether participating staff were aware of the study aims. This is important, because the instructions of the MBI suggest that individuals completing the measure are unaware of the construct it measures, as it could affect their response (Maslach et al., 1996). It is highly likely that ethical committees would not approve studies where participants are not aware of the construct they are being measured on. It is therefore important to consider that studies may have introduced participant or response bias, by explicitly stating the construct they were measuring.

Furthermore, it is important to consider that most of the included studies utilised a cross-sectional design, which prevents inference of casual relationships. Therefore, although significant associations between emotional exhaustion, as well as depersonalisation, and behaviours that challenge, were reported it is difficult to determine whether behaviours that challenge are part of the development or maintenance of burnout.

Another limitation of the correlational analyses is the possibility of confounding variables underlying the apparent relationship between burnout and behaviours that challenge. More specifically, a previous study reported an association between males and high depersonalisation scores (Mitchell & Hastings, 2001). Thus, it is important to take into consideration the overwhelming percentage of female staff, as gender may have led to the introduction of bias and subsequently to an under-estimation of the effects.

Moreover, in line with the Job Demands-Resources Model (Bakker & Demerouti, 2007), it is important to consider the influence of structural or workplace factors that, although not emphasised in this body of literature, are of importance. More specifically, differences in role ambiguity, poor relationships, unfair work demands, and communication difficulties could have impacted the results. Additionally, differences in job resources, staff autonomy, work relationships, opportunities for advancement, supervision and training between settings and staff could have also affected the relationship between staff burnout and behaviours that challenge.

Finally, it is difficult to draw meaningful conclusions from the included studies for a number of reasons. Firstly, due to most studies not assessing power and thus, increasing the possibility that their results were underpowered, and secondly, due to majority of the included studies receiving either a moderate or weak rating during the quality assessment, highlighting the need for further high-quality research.

Strengths of the Current Review

The current review included a pre-registered protocol which ensured transparency and reproducibility of the review. Additionally, the search strategy was comprehensive and included a number of relevant databases, both for published and unpublished research.

Furthermore, a second reviewer was used throughout the study selection process to avoid paper selection bias and to increase rigour. A small percentage of the data extraction was also checked by an experienced researcher to ensure information was accurately recorded. Finally, two raters

independently assessed risk of bias within the included studies and inter-rated agreement was reported to reduce errors and biases.

Limitations of the Current Review

There are some limitations in this review that should be taken into consideration. The literature review was conducted in a systematic and exhaustive manner. However, due to translation limitations papers not published in English were excluded which introduces a potential language bias. Additionally, all included staff were from Western countries, potentially underrepresenting services from other countries (e.g., Asiatic countries) which reduces the generalisability of the results.

A second limitation is that a number of the included studies reported the relationship between burnout and types of behaviours that challenge (i.e., aggression and self-injury) independently. This required data to be combined by the lead researcher to fit the meta-analyses, which could debatably have affected the concept studied.

The exploration of homogeneity was also impacted by the lack of information provided within studies. Despite the lead researcher directly contacting authors for access to papers, or for appropriate statistical results, several papers were excluded as this information was not provided. Although we believe this would not have significantly altered the results of the meta-analyses, it makes strong conclusions difficult. This problem is also commonly reported across the literature and presents as a significant barrier to conducting comprehensive meta-analyses (Hardwicke & Ioannidis, 2018).

A final limitation of this review is that only a small proportion of the data extraction was checked which increases the possibility of errors.

Implications for Research, Policy & Practice

While interest in this area is growing, findings from this meta-analysis have highlighted the lack of longitudinal designs examining burnout and behaviours that challenge in services for people who have ID. As previously stated, cross-sectional study designs do not allow for causal assumptions to be tested directly. Further longitudinal research is necessary to ascertain whether behaviours that challenge contribute towards the development or the maintenance of burnout in staff working with

individuals who have ID. This is particularly important due to the protracted nature of behaviours that challenge.

Another observation from this meta-analysis was the lack of consistency regarding the measure of behaviours that challenge. The assessment of behaviours that challenge is complex because of the socially constructed nature of the concept. Future studies should implement measures which have been validated for use in services for people who have ID. Clear reporting of the type of behaviours that challenge should also be carried out, to allow for nuances between types of behaviours to be explored. Further research may also wish to compare the magnitude of the relationship between staff burnout and behaviours that challenge in services for people who have ID, to the magnitude of this relationship in other professionals, such as staff supporting individuals with autism or dementia, as this was beyond the scope of this review.

We can be less certain about the direct implications on clinical practice, due to the correlational nature of the included studies. However, as the results suggest an association between behaviours that challenge and burnout the presence of one would also imply the presence of the other. Thus, services should carefully monitor the wellbeing of staff who work with behaviours that challenge, and support should be offered to reduce the risk of developing burnout. Alternatively, in services where there is a high prevalence of behaviours that challenge, the implementation of programmes or interventions targeting burnout should be considered.

Conclusions

Understanding burnout in staff who work with people who have ID is important for several reasons. Firstly, research has highlighted the negative consequences on individuals who have ID and the quality of care they receive (White et al., 2003). Secondly, burnout has been linked to high rates of attrition (Test et al., 2013), increased staff sickness, absenteeism, and turnover intentions (Razza, 1993). This is the first systematic review and meta-analysis to explore the relationship between behaviours that challenge and burnout in this population. Findings suggest a link between emotional exhaustion, as well as depersonalisation, and behaviours that challenge. However, cultural

differences regarding behaviours that challenge, the methodological differences, and the unexplained heterogeneity should be taken into consideration when interpreting these results. Nevertheless, this review demonstrates significant preliminary findings and highlights the need for future research.

References

References marked with an asterisk (*) were included in the review.

Aitken, C. J., & Schloss, J. A. (1994). Occupational stress and burnout amongst staff working with people with an intellectual disability. *Behavioral Interventions*, *9*(4), 225–234. https://doi.org/10.1002/bin.2360090404

Ali, A., Blickwedel, J., & Hassiotis, A. (2014). Interventions for challenging behaviour in intellectual disability. *Advances in Psychiatric Treatment, 20*(3), 184-192. https://doi.org/10.1192/apt.bp.113.011577

Aman, M. G., Singh, N. N., Stewart, A. W. & Field, C. J. (1985). The aberrant behavior checklist: A behavior rating scale for the assessment of treatment effects. *American Journal of Mental Deficiency*, *89(*5), 485–491.

Anderson, D. G. (2000). Coping strategies and burnout among veteran child protection workers. *Child Abuse & Neglect*, *24*(6), 839-848. https://doi.org/10.1016/S0145-2134(00)00143-5

Armijo-Olivo, S., Stiles, C.R., Hagen, N.A., Biondo, P.D., & Cummings, G.G. (2012). Assessment of study quality for systematic reviews: A comparison of the Cochrane Collaboration Risk of Bias Tool and the Effective Public Health Practice Project Quality Assessment tool: Methodological research. *Journal of Evaluation in Clinical Practice*, *18*(1), 12-18. https://doi.org/10.1111/j.1365-2753.2010.01516.x

Baker, P., & Daynes, S. (2010). Outcome measurement for people with intellectual disability who present challenging behaviour. *Advances in Mental Health and Intellectual Disabilities, 4*(2), 13-19. https://doi.org/10.5042/amhid.2010.0314

Bakker, A.B., & Demerouti, E. (2007). The Job Demands-Resources model: State of the art. *Journal of Managerial Psychology, 22*(3), 309-328. https://doi.org/10.1108/02683940710733115

*Bartholomew, S.N. (2014). *What is the relationship between challenging behaviour, staff burnout and job performance?* (Publication No. U616356). [Doctoral Thesis, University of Birmingham]. ProQuest Dissertations and Theses Global. https://www.proquest.com/dissertations-theses/what-is-relationship-between-challenging/docview/1651907760/se-2?accountid=13828

Bekker, M. H., Croon, M. A., & Bressers, B. (2005). Childcare involvement, job characteristics, gender and work attitudes as predictors of emotional exhaustion and sickness absence. *Work & Stress*, *19*(3), 221-237. https://doi.org/10.1080/02678370500286095

Ben-Zur, H., & Michael, K. (2007). Burnout, social support, and coping at work among social workers, psychologists, and nurses: The role of challenge/control appraisals. *Social Work in Health Care*, *45*(4), 63-82. https://doi.org/10.1300/J010v45n04_04

Boland, A., Cherry, G., & Dickson, R. (2017). *Doing a systematic review: A student's guide*. SAGE Publications.

Borenstein, M., Hedges, L. V., Higgins, J. P. T., & Rothstein, H. R. (2009). *Introduction to Meta-Analysis*. John Wiley and Sons. 10.1002/9780470743386

Borenstein, M., Hedges, L., Higgins, J., & Rothstein, H. (2013). *Comprehensive Meta-Analysis Version 3*. Biostat.

Borritz, M., Bültmann, U., Rugulies, R., Christensen, K. B., Villadsen, E., & Kristensen, T. S. (2005). Psychosocial work characteristics as predictors for burnout: Findings from 3-year follow up of the PUMA Study. *Journal of Occupational and Environmental Medicine, 47*(10), 1015-1025. 10.1097/01.jom.0000175155.50789.98

Bowring, D.L., Totsika, V., Hastings, R.P., Toogood, S., & Griffith, G.M. (2017). Challenging behaviours in adults with an intellectual disability: A total population study and exploration of risk indices. *The British Journal of Clinical Psychology, 56*(1), 16-32. 10.1111/bjc.12118

Card, N. A. (2012). *Applied meta-analysis for social science research*. Guilford Press.

*Chung, M. C., & Corbett, J. (1998). The burnout of nursing staff working with challenging

    behaviour clients in hospital-based bungalows and a community unit. *International Journal of*

    Nursing Studies, *35*(1-2), 56–64. 10.1016/s0020-7489(98)00015-7

Chung, M.C., Corbett, J.A., & Cumella, S. (1996). Relating staff' burnout to clients with

    challenging behaviour in people with a learning difficulty: Pilot study 2. *European Journal of*

    Psychiatry, 10, 155-166.

*Chung, M. C., & Harding, C. (2009). Investigating burnout and psychological well-being of staff

    working with people with intellectual disabilities and challenging behaviour: The role of

    personality. *Journal of Applied Research in Intellectual Disabilities*, *22*(6), 549-560.

    https://doi.org/10.1111/j.1468-3148.2009.00507.x

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*(1), 155–159.

    https://doi.org/10.1037/0033-2909.112.1.155

Courtenay, K., & Cooper, V. (2021). Covid 19: People with learning disabilities are highly

    vulnerable. *British Medical Journal*, *374*: n1701, 1-2. https://doi.org/10.1136/bmj.n1701

Cox, N. J. (2008). Speaking Stata: Correlation with confidence, or Fisher's z revisited. *The Stata*

    Journal, *8*(3), 413-439. https://doi.org/10.1177/1536867X0800800307

Crocker, A. G., Mercier, C., Allaire, J. F., & Roy, M. E. (2007). Profiles and correlates of

    aggressive behaviour among adults with intellectual disabilities. *Journal of Intellectual*

    Disability Research, *51*(10), 786-801. https://doi.org/10.1111/j.1365-2788.2007.00953.x

Deeks, J. J., Higgins, J. P., & Altman, D. G. (2019). Analysing data and undertaking meta-analyses.

    In J.P. Higgins, J. Thomas, J. Chandler, M. Cumpston, T. Li, M.J. Page, V.A. Welch (Eds.),

    Cochrane handbook for systematic reviews of interventions (pp. 241-284). John Wiley &

    Sons. https://doi.org/10.1002/9781119536604.ch10

*de Looff, P., Nijman, H., Didden, R., & Embregts, P. (2018). Burnout symptoms in forensic

    psychiatric nurses and their associations with personality, emotional intelligence and client

aggression: A cross-sectional study. *Journal of Psychiatric and Mental Health Nursing*, *25*(8), 506–516. 10.1111/jpm.12496

Demerouti, E., Bakker, A. B., & Leiter, M. (2014). Burnout and job performance: The moderating role of selection, optimization, and compensation strategies. *Journal of Occupational Health Psychology*, *19*(1), 96-107. 10.1037/a0035062

Devereux, J., Hastings, R., & Noone, S. (2009). Staff stress and burnout in intellectual disability services: Work stress theory and its application. *Journal of Applied Research in Intellectual Disabilities*, *22*(6), 561-573. https://doi.org/10.1111/j.1468-3148.2009.00509.x

Duval, S., & Tweedie, R. (2000). A nonparametric "trim and fill" method of accounting for publication bias in meta-analysis. J*ournal of the American Statistical Association*, *95*(449), 89–98. https://doi.org/10.2307/2669529

Eckleberry-Hunt, J., Kirkpatrick, H., & Barbera, T. (2018). The problems with burnout research. *Academic Medicine Journal of the Association of American Medical Colleges*, *93*(3), 367–370. 10.1097/ACM.0000000000001890

Egger, M., Smith, G. D., Schneider, M., & Minder, C. (1997). Bias in meta-analysis detected by a simple, graphical test. *British Medical Journal*, *315*(7109), 629–634. 10.1136/bmj.315.7109.629

Emerson, E. (2001). *Challenging behaviour: Analysis and intervention in people with severe intellectual disabilities*. Cambridge University Press.

Emerson, E., & Einfeld, S. (2011). *Challenging Behaviour* (3rd Edition). Cambridge University Press. https://doi.org/10.1017/CBO9780511861178

Ferguson, C. J., & Brannick, M. T. (2012). Publication bias in psychological science: Prevalence, methods for identifying and controlling, and implications for the use of meta-analyses. *Psychological Methods, 17*(1), 120–128. https://doi.org/10.1037/a0024445

*Flynn, S., Hastings, R. P., Gillespie, D., McNamara, R., & Randell, E. (2018). Is the amount of exposure to aggressive challenging behaviour related to staff work-related well-being in

intellectual disability services? Evidence from a clustered research design. *Research in Developmental Disabilities*, *81*, 155–161. 10.1016/j.ridd.2018.04.006

Gill-Monte, P. R., & Peiro, J. M. (1998). A study on significant sources of the ''burnout syndrome'' in workers at occupational centres for the mentally disabled. *Psychology in Spain, 1*, 55–62.

Hallsten, L., Josephson, M., & Torgén, M. (2005). *Performance-based self-esteem: A driving force in burnout processes and its assessment. Arbete Och Hälsa, 4*, 1–40. http://hdl.handle.net/2077/4355

Hardwicke, T. E., & Ioannidis, J. P. (2018). Populating the data ark: An attempt to retrieve, preserve, and liberate data from the most highly-cited psychology and psychiatry articles. *PLoS ONE,* 13: e0201856, 1-12. https://doi.org/10.1371/journal.pone.0201856

Harris, P., Humphreys, J., & Thomson, G. (1994). A Checklist of Challenging Behaviour: The development of a survey instrument. *Mental Handicap Research, 7(2)*, 118–133. https://doi.org/10.1111/j.1468-3148.1994.tb00120.x

Hastings, R. P. (2002). Do challenging behaviors affect staff psychological well-being? Issues of causality and mechanism. *American Journal on Mental Retardation*, *107*(6), 455-467. https://doi.org/10.1352/0895-8017(2002)107<0455:DCBASP>2.0.CO;2

Hastings, R. P. (2005). Staff in special education settings and behaviour problems: towards a framework for research and practice. *Educational Psychology, 25*(2-3), 207– 221. https://doi.org/10.1080/0144341042000301166

Hastings, R.P., & Brown, T. (2000). Functional assessment and challenging behaviors: Some future directions. *Journal of the Association for Persons with Severe Handicaps*, *25*(4), 229-240. 10.2511/rpsd.25.4.229

Hastings, R.P., & Brown, T. (2002). Behavior problems of children with autism, parental self-efficacy, and mental health. *American Journal on Mental Retardation, 107*(3), 222-232. https://doi.org/10.1352/0895-8017(2002)107<0222:BPOCWA>2.0.CO;2

Hatton, C., Emerson, E., Rivers, M., Mason, H., Mason, L., Swarbrick, R., Kiernan, C., Reeves, D., & Alborz, A. (1999). Factors associated with staff stress and work satisfaction in services for people with intellectual disability. *Journal of Intellectual Disability Research*, *43*(4), 253-267. https://doi.org/10.1046/j.1365-2788.1999.00208.x

*Hensel, J. M., Lunsky, Y., & Dewa, C. S. (2012). Exposure to client aggression and burnout among community staff who support adults with intellectual disabilities in Ontario, Canada. *Journal of Intellectual Disability Research*, *56*(9), 910–915. 10.1111/j.1365-2788.2011.01493.x

Heyvaert, M., Maes, B., & Onghena, P. (2010). A meta-analysis of intervention effects on challenging behaviour among persons with intellectual disabilities. *Journal of Intellectual Disability Research*, *54*(7), 634-649. https://doi.org/10.1111/j.1365-2788.2010.01291.x

Higgins, J. P., & Thompson, S. G. (2002). Quantifying heterogeneity in a meta-analysis. *Statistics in Medicine*, *21*(11), 1539-1558. https://doi.org/10.1002/sim.1186

Higgins, J. P., Thompson, S. G., Deeks, J. J., & Altman, D. G. (2003). Measuring inconsistency in meta-analyses. *British Medical Journal*, *327*(7414), 557-560. https://doi.org/10.1136/bmj.327.7414.557

Higgins, J.P.T., Thomas, J., Chandler, J., Cumpston, M., Li, T., Page, M.J., & Welch, V.A. (2021). *Cochrane Handbook for Systematic Reviews of Interventions* version 6.2. Cochrane. https://training.cochrane.org/handbook

Holden, B., & Gitlesen, J.P. (2009). The overlap between psychiatric symptoms and challenging behaviour: a preliminary study. *Research in Developmental Disabilities*, *30*(2), 210-218. https://doi.org/10.1016/j.ridd.2008.03.003

Holmqvist, R., & Jeanneau, M. (2006). Burnout and psychiatric staff's feelings towards patients. *Psychiatry Research*, *145*(2-3), 207-213. 10.1016/j.psychres.2004.08.012

Honkonen, T., Ahola, K., Pertovaara, M., Isometsä, E., Kalimo, R., Nykyri, E., Aromaa, A., & Lönnqvist, J. (2006). The association between burnout and physical illness in the general

population—results from the Finnish Health 2000 Study. *Journal of Psychosomatic Research*, *61*(1), 59-66. https://doi.org/10.1016/j.jpsychores.2005.10.002

*Howard, R., Rose, J., & Levenson, V. (2009). The psychological impact of violence on staff working with adults with intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities*, *22*(6), 538-548. https://doi.org/10.1111/j.1468-3148.2009.00496.x

Hunter, J. E., & Schmidt, F. L. (2004). *Methods of meta-analysis: Correcting error and bias in research findings*. SAGE.

Jackson, L. T. B., & Rothmann, S. (2005). An adapted model of burnout for educators in South Africa. *South African Journal of Education*, *25*(2), 100–108.

Kiernan, C., & Kiernan, D. (1994). Challenging behaviour in schools for pupils with severe learning difficulties. *Mental Handicap Research*, *7*(3), 177-201. https://doi.org/10.1111/j.1468-3148.1994.tb00126.x

* Kile, A.C. (2014). *Relationship among relational coping and reciprocity in direct care staffing services for adults with developmental disabilities and challenging behavior*. (Publication No. AAI3625790). [Doctoral dissertation, Fielding Graduate University]. ProQuest Dissertations and Theses Global. https://www.proquest.com/dissertations-theses/relationship-among-relational-coping-reciprocity/docview/1667943848/se-2?accountid=13828

King, B. H., Toth, K. E., Hodapp, R. M., & Dykens, E. M. (2009). Intellectual disability. In B. J. Sadock, V. A. Sadock, & P. Ruiz (Eds.), *Comprehensive textbook of psychiatry* (9th ed., pp. 3444–3474). Lippincott Williams & Wilkins.

*Klaver, M., van den Hoofdakker, B. J., Wouters, H., de Kuijper, G., Hoekstra, P. J., & de Bildt, A. (2021). Exposure to challenging behaviours and burnout symptoms among care staff: The role of psychological resources. *Journal of Intellectual Disability Research*, *65*(2), 173–185. 10.1111/jir.12800

LaMontagne, A. D., Keegel, T., & Vallance, D. (2007). Protecting and promoting mental health in

the workplace: Developing a systems approach to job stress. *Health Promotion Journal of*

Australia, *18*(3), 221-228. https://doi.org/10.1071/HE07221

Landis, J.R., & Koch, G.G. (1977). The measurement of observer agreement for categorical data.

Biometrics, 33(1), 159-174. https://doi.org/10.2307/2529310

Lernihan, E., & Sweeney, J. (2010). Measuring levels of burnout among care workers. *Learning*

Disability Practice, *13*(8), 27-33.

https://journals.rcni.com/doi/abs/10.7748/ldp2010.10.13.8.27.c8020

Light, R. J., & Pillemer, D. B. (1984). *Summing up: the science of reviewing research*. Harvard

University Press.

Lippold, T., & Burns, J. (2009). Social support and intellectual disabilities: A comparison between

social networks of adults with intellectual disability and those with physical disability.

Journal of Intellectual Disability Research, *53*(5), 463–473. https://doi.org/10.1111/j.1365-

2788.2009.01170.x

Lunqvist, L. (2013). Prevalence and risk markers of behaviour problems among adults with

intellectual disabilities. A total population study in Orebro County, Sweden. *Research in*

Developmental Disabilities, *34*(4), 1346-1356. https://doi.org/10.1016/j.ridd.2013.01.010

Lunsky, Y. (2008). The impact of stress and social support on the mental health of individuals with

intellectual disabilities. *Salud Publica de Mexico*, *50*(2), 151–153. 10.1590/s0036-

36342008000800007

Marchand, A., Durand, P., Haines, V., & Harvey, S. (2015). The multilevel determinants of

workers' mental health: results from the SALVEO study. *Social Psychiatry and Psychiatric*

Epidemiology, *50*(3), 445-459. 10.1007/s00127-014-0932-y

Maslach, C. (1993). Burnout: A multidimensional perspective. In W.B. Scaufeli, C. Maslach, & T.

Marek (Eds.), *Professional burnout: Recent developments in theory and research*, (pp. 19-

32). Taylor & Francis.

Maslach, C., & Jackson, S. (1981). The measurement and experience of burnout. *Journal of Occupational Behavior, 2*(2), 99-113. https://doi.org/10.1002/job.4030020205

Maslach, C, & Jackson, S. E. (1986). *Maslach Burnout Inventory manual.* Consulting Psychologists Press.

Maslach, C., & Jackson, S. (1993). *Maslach Burnout Inventory (2nd ed.).* Consulting Psychologist Press.

Maslach, C., Jackson, S. E., & Leiter, M. P. (1996). *MBI: Maslach burnout inventory*. Consulting Psychologists Press.

Maslach, C., Jackson, S. E., & Leiter, M. P. (1997). *Maslach burnout inventory*. Scarecrow Education.

Maslach, C., & Leiter, M. P. (2016). Understanding the burnout experience: Recent research and its implications for psychiatry. *World Psychiatry: Official Journal of the World Psychiatric Association*, *15*(2), 103–111. 10.1002/wps.20311

Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology*, *52*(1), 397-422. https://doi.org/10.1146/annurev.psych.52.1.397

Matlock, S. T., & Aman, M. G. (2011). Development of the adult scale of hostility and aggression: reactive–proactive (A-SHARP). *American Journal on Intellectual and Developmental Disabilities*, *116*(2), 130-141. 10.1352/1944-7558-116.2.130

Matson, J. L., Sipes, M., Fodstad, J. C., & Fitzgerald, M. E. (2011). Issues in the management of challenging behaviours of adults with autism spectrum disorder. *CNS Drugs*, *25*(7), 597-606. 10.2165/11591700-000000000-00000

Maulik, P.K., Mascarenhas, M.N., Mathers, C.D., Dua, T., & Saxena, S. (2011). Prevalence of intellectual disability: A meta-analysis of population-based studies. *Research in Developmental Disabilities*, *32*(2), 419–436. https://doi.org/10.1016/j.ridd.2010.12.018

*Mills, S., & Rose, J. (2011). The relationship between challenging behaviour, burnout and cognitive variables in staff working with people who have intellectual disabilities. *Journal of

Intellectual Disability Research, 55(9), 844-857. https://doi.org/10.1111/j.1365-2788.2011.01438.x

Mitchell, G., & Hastings, R. P. (2001). Coping, burnout, and emotion in staff working in community services for people with challenging behaviors. *American Journal on Mental Retardation, 106*(5), 448-459. https://doi.org/10.1352/0895-8017(2001)106<0448:CBAEIS>2.0.CO;2

Montgomery, A., Panagopoulou, E., Kehoe, I., & Valkanos, E. (2011). Connecting organisational culture and quality of care in the hospital: is job burnout the missing link? *Journal of Health Organization and Management, 25*(1), 108–23. 10.1108/14777261111116851

Moos, R. H., & Schaefer, J. A. (1993). Coping resources and processes: Current concepts and measures. In L. Goldberger & S. Breznitz (Eds.), *Handbook of stress: Theoretical and clinical aspects* (pp. 234–257). Free Press.

*Mutkins, E., Brown, R. F., & Thorsteinsson, E. B. (2011). Stress, depression, workplace and social supports and burnout in intellectual disability support staff. *Journal of Intellectual Disability Research*, 55(5), 500–510. 10.1111/j.1365-2788.2011.01406.x

National Institute for Health and Care Excellence (2015). *Challenging behaviour and learning disabilities: Prevention and interventions for people with learning disabilities whose behaviour challenges*. [NICE Guideline, No. 11]. https://www.ncbi.nlm.nih.gov/books/NBK355385/

*Nevill, R.E., Istvan, E.M., & Havercamp, S.M. (2021). The effects of aggression subtypes on burnout and caregiver instability in direct support professionals. *Journal of Positive Behavior Interventions, 24*(2), 99-109. https://doi.org/10.1177/10983007211013794

Nicholls, G., Hastings, R.P., & Grindle, C. (2020). Prevalence and correlates of challenging behaviour in children and young people in a special school setting. *European Journal of Special Needs Education*, 35(1), 40-54 https://doi.org/10.1080/08856257.2019.1607659

Norlund, S., Reuterwall, C., Höög, J., Lindahl, B., Janlert, U., & Birgander, L. S. (2010). Burnout, working conditions and gender-results from the northern Sweden MONICA Study. *BMC Public Health*, *10*(1), 1-9. 10.1186/1471-2458-10-326

Oliver, C., Hall, S., & Murphy, G. (2005). The early development of self-injurious behaviour: evaluating the role of social reinforcement. *Journal of Intellectual Disability Research*, *49*(8), 591-599. https://doi.org/10.1111/j.1365-2788.2005.00694.x

Oliver, C., Murphy, G. H., & Corbett, J. A. (1987). Self-injurious behaviour in people with mental handicap: a total population study. *Journal of Intellectual Disability Research*, *31*(2), 147-162. https://doi.org/10.1111/j.1365-2788.1987.tb01351.x

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Tetzlaff, J.M., Akl, E.A., Brennan, S.E., Chou, R., Glanville, J., Grimshaw, J.M., Hróbjartsson, A., Lalu, M.M., Li, T., Loder, E., Mayo-Wilson, E., McDonald, S., McGuinness, L.A., ... & Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *British Medical Journal*, 372, n71, 1-9. https://doi.org/10.1136/bmj.n71

Patrick, K., & Lavery, J. F. (2007). Burnout in Nursing. *Australian Journal of Advanced Nursing*, *24*(3), 43–48.

Peterson, R. A., & Brown, S. P. (2005). On the use of beta coefficients in meta-analysis. *Journal of Applied Psychology, 90*(1), 175–181. https://doi.org/10.1037/0021-9010.90.1.175

Poppes, P., Van der Putten, A. J. J., & Vlaskamp, C. (2010). Frequency and severity of challenging behaviour in people with profound intellectual and multiple disabilities. *Research in Developmental Disabilities*, *31*(6), 1269-1275. https://doi.org/10.1016/j.ridd.2010.07.017

Purvanova, R. K., & Muros, J. P. (2010). Gender differences in burnout: A meta-analysis. *Journal of Vocational Behavior*, *77*(2), 168-185. https://doi.org/10.1016/j.jvb.2010.04.006

Randall, K. J. (2007). Examining the relationship between burnout and age among Anglican clergy in England and Wales. *Mental Health, Religion & Culture*, *10*(1), 39–46. https://doi.org/10.1080/13674670601012303

Razza, N. J. (1993). Determinants of direct-care staff turnover in group homes for individuals with

    mental retardation. *Mental Retardation, 31*(5), 284–29.

Rojahn, J., Matson, J. L., Lott, D., Esbensen, A. J., & Smalls, Y. (2001). The Behavior Problems

    Inventory: An instrument for the assessment of self-injury, stereotyped behavior, and

    aggression/destruction in individuals with developmental disabilities. *Journal of Autism and*

    Developmental Disorders, 31, 577-588. 10.1023/a:1013299028321

Rojahn, J., Rowe, E. W., Sharber, A. C., Hastings, R., Matson, J. L., Didden, R., Kroes, D.B.H., &

    Dumont, E. L. M. (2012). The Behavior Problems Inventory-Short Form for individuals with

    intellectual disabilities: Part II: reliability and validity. *Journal of Intellectual Disability*

    Research, *56*(5), 546-565. https://doi.org/10.1111/j.1365-2788.2011.01506.x

Rosenthal, R. (1979). The file drawer problem and tolerance for null results. *Psychological Bulletin,*

    86(3), 638–641. https://doi.org/10.1037/0033-2909.86.3.638

Ryan, C., Bergin, M., & Wells, J. S. (2021). Work-related stress and well-being of direct care

    workers in intellectual disability services: A scoping review of the literature. *International*

    Journal of Developmental Disabilities, *67*(1), 1-22.

    https://doi.org/10.1080/20473869.2019.1582907

Scanlan, J. N., & Still, M. (2013). Job satisfaction, burnout and turnover intention in occupational

    therapists working in mental health. *Australian Occupational Therapy Journal*, *60*(5), 310-

    318. https://doi.org/10.1111/1440-1630.12067

Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with

    burnout and engagement: A multi-sample study. *Journal of Organizational Behavior: The*

    International Journal of Industrial, Occupational and Organizational Psychology and

    Behavior, *25*(3), 293-315. https://doi.org/10.1002/job.248

*Shead, J., Scott, H., & Rose, J. (2016). Investigating predictors and moderators of burnout in staff

    working in services for people with intellectual disabilities: The role of emotional

intelligence, exposure to violence, and self-efficacy. *International Journal of Developmental Disabilities*, *62*(4), 224-233. https://doi.org/10.1179/2047387715Y.0000000009

Skirrow, P., & Hatton, C. (2007). 'Burnout' amongst direct care workers in services for adults with intellectual disabilities: a systematic review of research findings and initial normative data. *Journal of Applied Research in Intellectual Disabilities*, *20*(2), 131-144. https://doi.org/10.1111/j.1468-3148.2006.00311.x

Smidt, A., Balandin, S., Reed, V., & Sigafoos, J. (2007). A communication training programme for residential staff working with adults with challenging behaviour: Pilot data on intervention effects. *Journal of Applied Research in Intellectual Disabilities*, *20*(1), 16-29. https://doi.org/10.1111/j.1468-3148.2006.00336.x

*Smyth, E., Healy, O., & Lydon, S. (2015). An analysis of stress, burnout, and work commitment among disability support staff in the UK. *Research in Developmental Disabilities*, *47*, 297– 305. 10.1016/j.ridd.2015.09.023

Test, D. W., Flowers, C., Hewitt, A., & Solow, J. (2003). Statewide study of the direct support staff workforce. *Mental retardation*, *41*(4), 276–285. 10.1352/0047-6765(2003)41<276:SSOTDS>2.0.CO;2

Thomas, B.H., Ciliska, D., Dobbins, M., & Micucci, S. (2004). A process for systematically reviewing the literature: Providing the research evidence for public health nursing interventions. *Worldviews on Evidence-Based Nursing*, *1*(3), 176-184. 10.1111/j.1524-475X.2004.04006.x

Thompson, S. G., & Higgins, J. P. (2002). How should meta-regression analyses be undertaken and interpreted?. *Statistics in Medicine*, *21*(11), 1559-1573. https://doi.org/10.1002/sim.1187

Totsika, V., & Hastings, R. P. (2009). Persistent challenging behaviour in people with an intellectual disability. *Current Opinion in Psychiatry*, *22*(5), 437–441. 10.1097/YCO.0b013e32832cd9b8

*Vassos, M. V., & Nankervis, K. L. (2012). Investigating the importance of various individual, interpersonal, organisational and demographic variables when predicting job burnout in disability support workers. *Research in Developmental Disabilities*, *33*(6), 1780–1791. 10.1016/j.ridd.2012.04.016

Warrens, M. J. (2015). Five ways to look at Cohen's kappa. *Journal of Psychology & Psychotherapy*, *5*(4), 1-4. 10.4172/2161-0487.1000197

Weigl, M., Schneider, A., Hoffmann, F., & Angerer, P. (2015). Work stress, burnout, and perceived quality of care: A cross-sectional study among hospital pediatricians. *European Journal of Pediatrics, 174*(9), 1237–46. 10.1007/s00431-015-2529-1

White, C., Holland, E., Marsland, D., & Oakes, P. (2003). The identification of environments and cultures that promote the abuse of people with intellectual disabilities: Areview of the literature. *Journal of Applied Research in Intellectual Disabilities, 16*(1), 1-9. https://doi.org/10.1046/j.1468-3148.2003.00147.x

World Health Organization (2021, May*). Definition: Intellectual disability.* https://www.euro.who.int/en/health-topics/noncommunicable-diseases/mental-health/news/news/2010/15/childrens-right-to-family-life/definition-intellectual-disability

Appendix A

Systematic Review & Meta-Analysis Protocol

Systematic review

* Review title.

A meta-analysis of staff burnout and challenging behaviour of adults with intellectual disabilities.

* Anticipated or actual start date.

25/11/2021

* Named contact.

Marcella Kapsokavadi

* Named contact email.

mkapsokavadi1@sheffield.ac.uk

* Organisational affiliation of the review.

The University of Sheffield

* Review team members and their organisational affiliations.

Professor Nigel Beail, University of Sheffield

* Funding sources/sponsors.

Not applicable

* Conflicts of interest.

None

* Review question.

Is burnout, as experienced by staff working with adults who have an intellectual disability, associated with behaviours that challenge.

* Searches.

Databases: PsycINFO, MEDLINE, Scopus, PubMed
Languages: English language only (due to translation limitations)
Search dates: any research up to November 2021

* Condition or domain being studied.

This meta-analysis aims to examine the association between burnout and behaviours that challenge

* Participants/population.

Inclusion criteria:
-Paid support/care staff who work with adults (aged 18 and above) with intellectual and other developmental disabilities.
-Staff who work in all types of setting (e.g., community, inpatient services).
-Direct care staff (e.g., healthcare worker, support worker, Nurse)
-Managerial staff or staff who hold other roles (e.g., Psychologist, Occupational Therapist, Ward Manager).
-social care staff
-education staff

Exclusion criteria
-Studies that are focused on burnout in family carers.
-Studies focused on staff working exclusively with children with intellectual and other developmental disabilities.
-When data of staff working with adults with intellectual disabilities is collapsed with that of other groups (e.g., family carers or staff working with children). However, if they form the majority they would be included.

* Intervention(s), exposure(s).

The main focus of this review is on burnout rather than interventions

* Comparator(s)/control.

Not Applicable

* Types of study to be included.

Inclusion criteria:
-RCTs reporting baseline data
-Mixed methods studies
-Quantitative non-randomised controlled trials (including cohort studies, case control studies, cross sectional studies)
-quantitative case studies and series

Exclusion criteria:
-Narrative review material only
-Literature reviews, editorials, dissertations, book chapters and commentaries
-Qualitative studies (including case studies)
-Studies that have used a sample already included in another study. Where this was to occur, the study with the largest sample, or if exactly the same, the sample first reported within a published paper will be included in the review.

* Main outcome(s).

Studies that include at least one measure of burnout.

The combination of scores for The Maslach Burnout Inventory (Maslach et al., 1996) is not recommended as each of the three subscales are seen a distinct construct and combining them reduces the reliability of the instrument and confounds the construct (Maslach et al., 2001). Therefore, correlations between each subscale of the MBI and challenging behaviours were independently examined.

Studies must include a measure of challenging behaviour.

Effects reflecting the association between burnout and behaviours that challenge for example, Pearson's r, t-test, odds ratio etc

* Data extraction (selection and coding).

A systematic review and meta-analysis of literature will be undertaken using four databases, papers will be retrieved, and duplicate papers discarded. The remaining papers will be screened for relevance based on title. References of the included studies will also be screened for eligibility. Titles and abstracts of studies retrieved from databases will be screened by one author to exclude articles not meeting inclusion criteria. The remaining full texts will then be screened by one author against the inclusion criteria to identify eligible studies. Data will also be extracted by one author.

A second author who will be blinded to the first authors decisions will check a small selection of the work (20%) in both the full text screening and extraction stages. Discrepancies will be resolved by face-to-face discussion and via contacting the original authors, if necessary. In case of missing data, original authors

Appendix B

Full Search Strategy

PsycInfo

APA PsycInfo <1806 to October Week 3 2021>

1	burnout.mp.	15757
2	occupational stress.mp. or exp Occupational Stress/	24099
3	exp Emotional Exhaustion/ or emotional exhaustion.mp.	4141
4	exp Compassion Fatigue/ or compassion fatigue.mp.	1408
5	vicarious trauma.mp.	597
6	secondary trauma.mp.	518
7	intellectual disab*.mp.	30097
8	exp Learning Disabilities/ or learning disab*.mp.	34638

9   developmental disab*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]   21067

10	disab*.mp.	174640
11	retard*.mp.	55429
12	handicap*.mp.	23645
13	cognitive impairment.mp. or exp Cognitive Impairment/	55947
14	exp Aggressive Behavior/ or exp Aggressiveness/ or aggress*.mp.	227891
15	self-inj*.mp.	11112
16	exp Stereotyped Behavior/ or stereotyp*.mp.	51275
17	challenging behav*.mp.	3858
18	behav*.mp.	1325847
19	exp Anger/ or anger.mp.	39745
20	destructive behav*.mp.	5065
21	maladaptive behav*.mp.	3181

22   exp Behavior Problems/ or exp Self-Injurious Behavior/ or problem behav*.mp.
        43476

23	1 or 2 or 3 or 4 or 5 or 6	31032
24	7 or 8 or 9 or 10 or 11 or 12 or 13	286880
25	14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22	1491654
26	23 and 24 and 25	336

Scopus

Results: 297

(TITLE-ABS-KEY ("burnout" OR "occupational stress" OR "emotional exhaustion" OR "compassion fatigue" OR "vicarious trauma" OR "secondary trauma") AND TITLE-ABS-KEY ("learning disab*" OR "intellectual disab*" OR "developmental disab*" OR "disab*" OR "retard*" OR "handicap*" OR "cognitive impairment") AND TITLE-ABS-KEY ("aggress*" OR "self-injur*" OR "stereotyp*" OR "challenging behav*" OR "behav*" OR "anger" OR "destructive behav*" OR "maladaptive behav*" OR "problem behav*"))

MEDLINE

Ovid MEDLINE(R) and Epub Ahead of Print, In-Process, In-Data-Review & Other Non-Indexed Citations and Daily <1946 to October 22, 2021>

1	burnout.mp. or Burnout, Psychological/	20772
2	occupational stress.mp. or Occupational Stress/	4985
3	emotional exhaustion.mp.	3311
4	compassion fatigue.mp. or Compassion Fatigue/	1294
5	vicarious trauma.mp.	197
6	secondary trauma.mp.	304
7	Learning Disabilities/ or learning disab*.mp.	18902
8	Intellectual Disability/ or intellectual disab*.mp.	67968
9	Developmental Disabilities/ or developmental disab*.mp.	24934
10	Disabled Persons/ or disab*.mp.	368681
11	retard*.mp.	133405
12	handicap*.mp.	25545
13	cognitive impairment.mp.	67956
14	Aggression/ or aggress*.mp.	242522
15	Self-Injurious Behavior/ or self-injur*.mp.	11308
16	Stereotyped Behavior/ or stereotyp*.mp.	39815
17	challenging behav*.mp.	1804
18	behav*.mp.	1856562
19	Anger/ or anger.mp.	19372
20	destructive behav*.mp.	1159
21	maladaptive behav*.mp.	1700
22	Problem Behavior/ or problem behav*.mp.	7657
23	1 or 2 or 3 or 4 or 5 or 6	25781
24	7 or 8 or 9 or 10 or 11 or 12 or 13	549072
25	14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22	2072052
26	23 and 24 and 25	115

PubMed

Search number	Query	Results
4	#1 AND #2 AND #3	146
3	"aggress*" OR "self-injur*" OR "stereotyp*" OR "challenging behav*" OR "behav*" OR "anger" OR "destructive behav*" OR "maladaptive behav*" OR "problem behav*"	2,302,103
2	"learning disab*" OR "intellectual disab*" OR "developmental disab*" OR "disab*" OR "retard*" OR "handicap*" OR "cognitive impairment"	571,880
1	"burnout" OR "occupational stress" OR "emotional exhaustion" OR "compassion fatigue" OR "vicarious trauma" OR "secondary trauma"	26,084

Appendix C

Effective Public Health Practice Project: Quality Assessment Tool for Quantitative Studies

Removed for copyright purposes.

Appendix D

Excluded Studies and Reasons

Study	Reason for exclusion
Adachi, M., & Sakakiharam H. (2016). Cognitive evaluations and occupational stress: Responses to user support problems by support staff at a facility for persons with disabilities. *The Japanese Journal of Special Education, 53*(5), 313-322. https://doi.org/10.6033/tokkyou.53.313	Language limitation
Agervold, M., & Andersen, L. P. (2006). Incidence and impact of violence against staff on their perceptions of the psychosocial work environment. *Nordic Psychology, 58*(3), 232-247. https://doi.org/10.1027/1901-2276.58.3.232	Did not measure behaviours that challenge
Ambrosini, M. (2013). *The relationship of role-based, task-based, boundary-spanning, and conflict-mediating stress experienced by New York state special education administrators and emotional exhaustion, depersonalization, and personal accomplishment.* (Order No. 3570133) [Doctoral dissertation, Dowling College]. ProQuest Dissertations & Theses Global. https://www.proquest.com/docview/1402578072	Did not include staff working with adults who have ID
Beer, J. (2005). *The relationship of burnout, aggression from clients towards staff, staff's history of abuse in childhood and other factors, to abuse of developmentally disabled clients in a residential setting.* (Order No. 3162709) [Doctoral dissertation, New York University]. ProQuest Dissertations & Theses Global. https://www.proquest.com/docview/305465418	Paper not retrieved
Bravo, M. (2020). *Job Stress Among Workers in Secure Residential Facilities with Developmentally Disabled Youth.* (Order No. 27744195) [Doctoral dissertation, Capella University]. ProQuest Dissertations & Theses Global. https://www.proquest.com/docview/2392044034?pq-origsite=gscholar&fromopenview=true	Did not include staff working with adults who have ID
Chung, M. C., Corbett, J., & Cumella, S. I. P. R. (1996). Relating staff' burnout to clients with challenging behaviour in people with a learning difficulty: Pilot study 2. *The European Journal of Psychiatry, 10*(3), 155-165.	Did not measure/report the relationship between behaviours that challenge and burnout
Chung, M. C., & Thacker, S. (1999). A Comparative Study on Disability and Challenging Behavior in Hospital Wards and Hospital-Based Bungalows. *Journal of Developmental and Physical Disabilities, 11*(1), 1-16. https://doi.org/10.1023/A:1021852416450	Did not measure/report the relationship between behaviours that challenge and burnout

Edwards, P., & Miltenberger, R. (1991). Burnout among staff members at community residential facilities for persons with mental retardation. *Mental Retardation*, *29*(3), 125. https://www.proquest.com/scholarly-journals/burnout-among-staff-members-at-community/docview/1293458894/se-2?accountid=13828	Did not measure behaviours that challenge
Gerits, L., Derksen, J. J., & Verbruggen, A. B. (2004). Emotional intelligence and adaptive success of nurses caring for people with mental retardation and severe behavior problems. *Mental Retardation*, *42*(2), 106–121. 10.1352/0047-6765(2004)42<106:EIAASO>2.0.CO;2	Did not measure behaviours that challenge
Hanson, G. C., Perrin, N. A., Moss, H., Laharnar, N., & Glass, N. (2015). Workplace violence against homecare workers and its relationship with workers health outcomes: a cross-sectional study. *BMC Public Health*, *15* (11), 1-13. 10.1186/s12889-014-1340-7	Did not include staff working with adults who have ID
Hastings R. P. (2002). Do challenging behaviors affect staff psychological well-being? Issues of causality and mechanism. *American Journal of Mental Retardation*, *107*(6), 455–467. 10.1352/0895-8017(2002)107<0455:DCBASP>2.0.CO;2	Did not measure/report the relationship between behaviours that challenge and burnout
Hensel, J. M., Lunsky, Y., & Dewa, C. S. (2014). The mediating effect of severity of client aggression on burnout between hospital inpatient and community residential staff who support adults with intellectual disabilities. *Journal of Clinical Nursing, 23*(9-10), 1332-1341. https://doi.org/10.1111/jocn.12387	Sample already included in another study
Ingham, B., Riley, J., Nevin, H., Evans, G., & Gair, E. (2013). An initial evaluation of direct care staff resilience workshops in intellectual disabilities services. *Journal of Intellectual Disabilities*, *17*(3), 214–222. 10.1177/1744629513494642	Did not measure behaviours that challenge
Ko, C., Lunsky, Y., Hensel, J., & Dewa, C. S. (2012). Burnout among summer camp staff supporting people with intellectual disability and aggression. *Intellectual and Developmental Disabilities, 50*(6), 479-485. https://doi.org/10.1352/1934-9556-50.06.479	Did not include staff working with adults who have ID
Lawson, D. A., & O'Brien, R. (1994). Behavioral and self-report measures of staff burnout in developmental disabilities. *Journal of Organizational Behavior Management, 14*(2), 37-54. https://doi.org/10.1300/J075v14n02_04	Did not measure behaviours that challenge

Long, C., Collins, L., MacDonald, C., Johnston, D., &Hardy, S. (2008). Staff stress and challenging behaviour on a medium secure development disabilities ward for women: the outcomes of organisational change, and clinical interventions. *The British Journal of Forensic Practice, 10*(3), 4-11. https://doi.org/10.1108/14636646200800014	Did not measure/report the relationship between behaviours that challenge and burnout
Lundström, M., Graneheim, U. H., Eisemann, M., Richter, J., & Åström, S. (2007). Personality impact on experiences of strain among staff exposed to violence in care of people with intellectual disabilities. *Journal of Policy and Practice in Intellectual Disabilities, 4*(1), 30-39. https://doi.org/10.1111/j.1741-1130.2006.00095.x	Did not measure behaviours that challenge
McKillop, J.M., & Minnes, P. (2011). Occupational satisfaction, strain, and intention to quit among direct care providers assisting individuals with developmental disabilities. *Journal on Developmental Disabilities, 17*(1), 7.	Did not measure/report the relationship between behaviours that challenge and burnout
Mitchell, G., & Hastings, R. P. (2001). Coping, burnout, and emotion in staff working in community services for people with challenging behaviors. *American Journal on Mental Retardation, 106*(5), 448-459. https://doi.org/10.1352/0895-8017(2001)106<0448:CBAEIS>2.0.CO;2	Did not measure behaviours that challenge
Nevill, R. (2017). *Retention, resilience, and burnout of staff caregivers for aggressive adults with DD.* [Doctoral dissertation] The Ohio State University. http://rave.ohiolink.edu/etdc/view?acc_num=osu149972433273141	Sample already included in another study
Paris, A., Grindle, C., Baker, P., Brown, F. J., Green, B., & Ferreira, N. (2021). Exposure to challenging behaviour and staff psychological well-being: The importance of psychological flexibility and organisational support in special education settings. *Research in Developmental Disabilities, 116*, 104027. https://doi.org/10.1016/j.ridd.2021.104027	Did not include staff working with adults who have ID
Rose, D., Horne, S., Rose, J. L., & Hastings, R. P. (2004). Negative emotional reactions to challenging behaviour and staff burnout: Two replication studies. *Journal of Applied Research in Intellectual Disabilities, 17*(3), 219-223. https://doi.org/10.1111/j.1468-3148.2004.00194.x	Did not measure behaviours that challenge
Rose, J., Mills, S., Silva, D., & Thompson, L. (2013). Client characteristics, organizational variables and burnout in care staff: The mediating role of fear of assault. *Research in Developmental Disabilities, 34*(3), 940-947. https://doi.org/10.1016/j.ridd.2012.11.014	Sample already included in another study
Silva, N. R. D., Bolsoni-silva, A. T., Rodrigues, O. M. P. R., & Capellini, V. L. M. F. (2015). The work of special education teachers, burnout indicators and behavior of students: Correlations	Not in English Language

|	
and predictions. *Revista Brasileira de Educação Especial, 21*, 363-376	
Willey-Spurrier, S.K. (2013). *A quantitative study examining violent individuals' Impact on health worker burnout.* University of the Rockies.	Paper not retrieved

Appendix E

Quality Appraisal of Included Studies

Study	Selection Bias	Study Design	Confounders	Blinding	Data Collection Method	Withdrawals and Drop-outs	Global Rating
Bartholomew (2014)	Strong	Weak	Strong	N/A	Strong	N/A	Moderate
Chung & Corbett (1998)	Strong	Weak	Strong	N/A	Strong	N/A	Weak
Chung & Harding (2009)	Strong	Weak	Strong	N/A	Strong	N/A	Moderate
de Loof et al. (2018)	Strong	Weak	Moderate	N/A	Moderate	N/A	Weak
Flynn et al. (2018)	Moderate	Strong	Strong	Weak	Moderate	Weak	Weak
Hensel et al. (2012)	Strong	Weak	Strong	N/A	Moderate	N/A	Weak
Howard et al. (2009)	Strong	Weak	Strong	N/A	Moderate	N/A	Moderate
Kile (2014)	Strong	Weak	Strong	N/A	Strong	N/A	Moderate
Klaver et al. (2021)	Strong	Weak	Moderate	N/A	Strong	N/A	Weak
Mills & Rose (2011)	Strong	Weak	Moderate	N/A	Strong	N/A	Moderate
Mutkins et al. (2011)	Moderate	Weak	Moderate	N/A	Moderate	N/A	Weak
Nevil et al. (2021)	Strong	Moderate	Strong	N/A	Strong	N/A	Strong
Shead et al. (2016)	Moderate	Weak	Strong	N/A	Moderate	N/A	Moderate
Smyth et al. (2015)	Strong	Weak	Moderate	N/A	Strong	N/A	Moderate
Vassos & Nankervis (2012)	Moderate	Weak	Moderate	N/A	Strong	N/A	Moderate

Appendix F

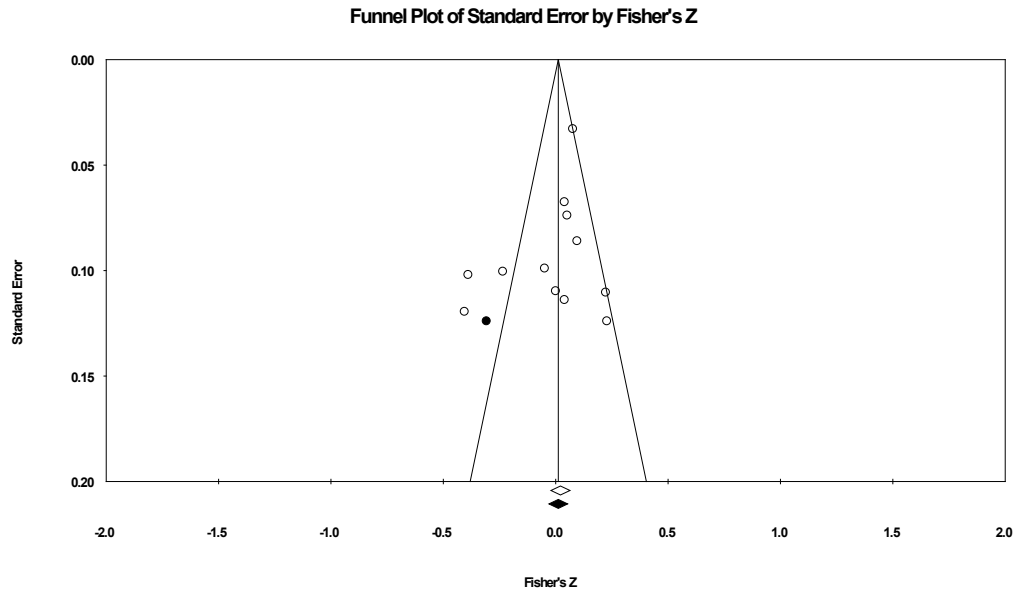## Emotional Exhaustion Publication Bias After Trim and Fill

Funnel Plot of Standard Error by Fisher's Z
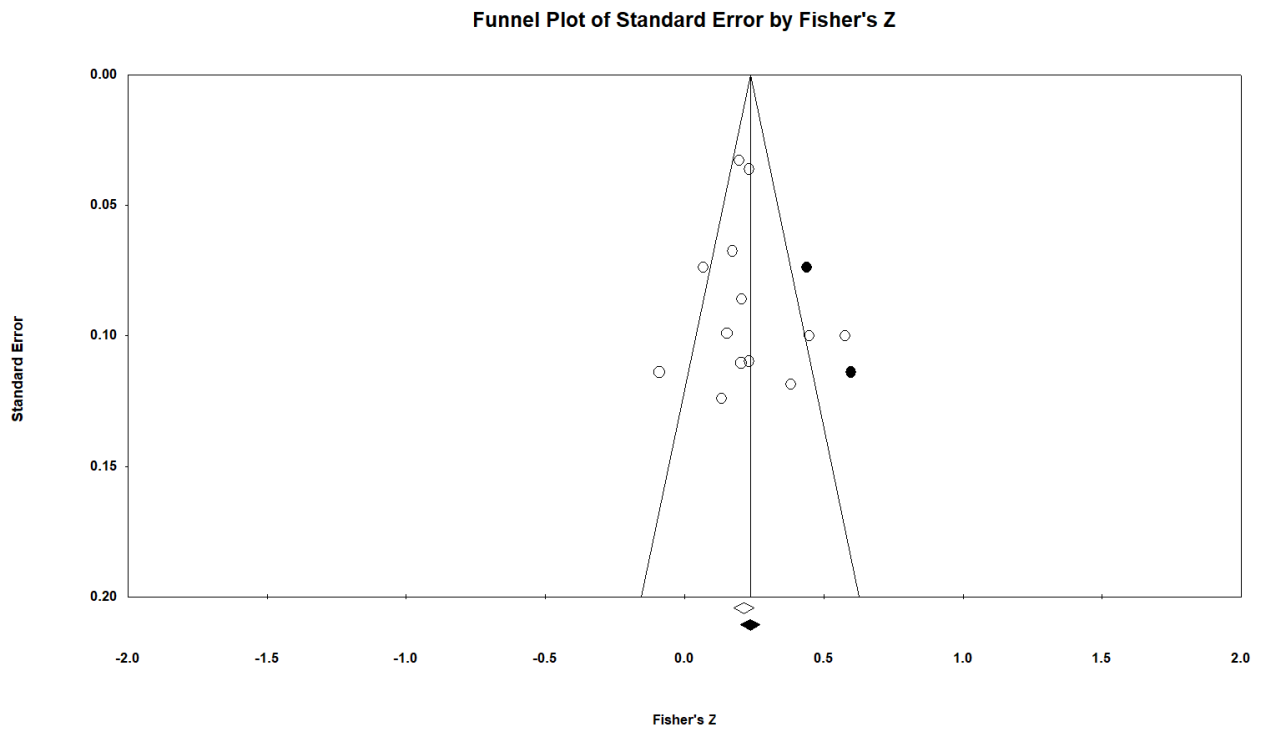
Appendix G

Depersonalisation Publication Bias After Trim and Fill

Funnel Plot of Standard Error by Fisher's Z
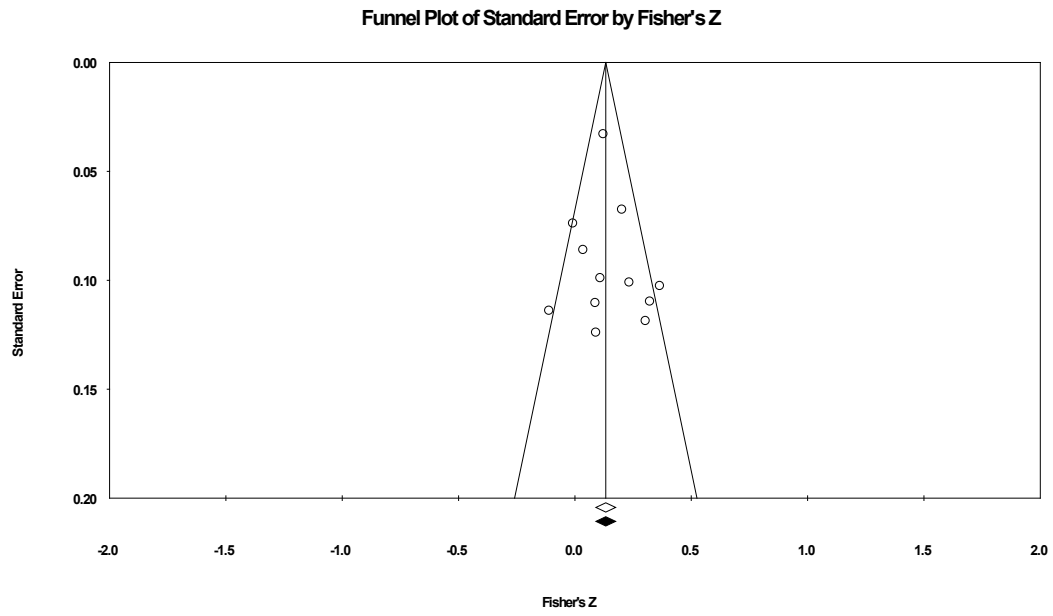
Appendix H

Personal Accomplishment Publication Bias After Trim and Fill

Funnel Plot of Standard Error by Fisher's Z

Appendix I

Sensitivity Analyses Summary Table

Emotional Exhaustion

Radom-effects meta-analysis based on:	k	Effect Size	Confidence Intervals	p	I^2	Q
Primary analysis	13	.217	.149 – .283	< .001	64.073	33.401
Excluding Chung & Harding (2009)	12	.201	.134 – .266	< .001	60.317	27.72
Excluding Vassos & Nankervis (2012)	12	.193	.137 – .248	< .001	44.346	19.765

Depersonalisation

Radom-effects meta-analysis based on:	k	Effect Size	Confidence Intervals	p	I^2	Q
Primary analysis	12	.140	.071 – .207	< .001	50.388	22.172
Excluding Chung & Harding (2009)	11	.133	.06 – .204	< .001	52.633	21.112
Excluding Vassos & Nankervis (2012)	11	.122	.057 – .186	< .001	40.41	16.781

Personal accomplishment

Radom-effects meta-analysis based on:	k	Effect Size	Confidence Intervals	p	I²	Q
Primary analysis	12	.021	- .021 – .064	.328	76.03	45.883
Excluding Chung & Harding (2009)	11	.014	- .072 – .099	.756	65.54	29.019
Excluding Vassos & Nankervis (2012)	11	- .002	- .1 – .097	.976	74.433	39.114

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Section 2: Empirical Project

Attachment Orientations, Coping Self-Efficacy and Compassion Fatigue: A Study on Staff Working

with People Who Have Intellectual Disability and Who Display Behaviours That Challenge.

Abstract

Objectives: Previous literature has started to explore the relationship between attachment orientations and compassion fatigue (CF). However, to date no study has focused on CF in staff working with people who have Intellectual Disability (ID). The present study aimed to investigate the relationship between attachment orientations, coping self-efficacy and CF. Additionally, it aimed to explore the mediating role of coping self-efficacy on attachment orientations and CF.

Methods: The study employed a within-subject cross-sectional design. A total of 104 staff working with people who have ID and behaviours that challenge participated in the study. Data were gathered using self-report questionnaires. Participants completed measures about their attachment orientation, coping self-efficacy and CF.

Results: Results indicated correlations between all study variables. Further analyses showed that coping self-efficacy mediated the relationship between anxious attachment and burnout ($b = .67$, 95% BCa CI: .305 - 1.122), avoidant attachment and burnout ($b = .616$, 95% BCa CI: .184 - 1.094), as well as anxious attachment and compassion satisfaction ($b = -.967$, 95% BCa CI: -1.54 - -.475]). Coping self-efficacy also moderated the relationship between avoidant attachment and compassion satisfaction ($b = - .028$, 95% CI: - .048 - .008, $t = -2.77$, $p < .007$).

Conclusion: Correlational analyses were consistent with existing literature and the study hypotheses. However, these associations were not maintained during more complex analyses. Hypotheses relating to mediation analyses yielded mixed results. Findings relating to avoidant attachment must be approached with some caution due to the moderate alpha level found.

Practitioner Points:

- Improving staff's coping self-efficacy could reduce the likelihood of developing CF.

- Staff working with people who have ID and behaviours that challenge could benefit from considering how their attachment orientation may be impacting their wellbeing and their ability to cope in the workplace.

- Supervisors could benefit from having an awareness of staff's attachment orientation, as anxious attachment was found to be a predictor of CF.

Introduction

Intellectual disability (ID) is characterised by a reduced social, cognitive, and adaptive ability (Matson & Shoemaker, 2009). Behaviours that challenge can take many forms including aggression, self-injury, and stereotypy. They often develop early in the lives of individuals who have ID (Luiselli, 2012) and previous research has estimated that approximately 10-15% of people who have ID will display behaviours that challenge (Emerson, 2001; Poppes et al., 2010). These behaviours can have a significant negative impact on the quality of life of the individual with an ID (Lloyd & Kennedy, 2014) and research has also found that increased exposure to behaviours that challenge is linked to poorer psychological wellbeing in staff (Jenkins et al., 1997).

Compassion Fatigue

Compassion fatigue (CF) refers to adverse psychological consequences that result from helping suffering others (Figley, 2002). Most commonly, it is used to describe the negative consequences of long-term, continuous involvement in emotionally demanding situations (Bride et al., 2007). A well-established model proposed by Figley (1995) suggests that CF is a multidimensional phenomenon that has three components: increased burnout, increased secondary traumatic stress, and reduced compassion satisfaction.

Burnout relates to feelings of hopelessness, feelings that one's efforts are insignificant, and difficulties with carrying out one's work (Stamm, 2005). Burnout has previously been found to increase risk of making a medical mistake (Montgomery et al., 2011) and impact quality-of-care staff provide (Weigl et al., 2015). A recent meta-analysis also found a link between increased behaviours that challenge and higher levels of staff burnout in ID services (Kapsokavadi & Beail, 2022).

Secondary traumatic stress resembles the symptoms of post-traumatic stress disorder (PTSD), except it results from helping suffering others (Rauvola et al., 2019). Secondary traumatic stress has previously been linked to reduced empathy (Wagaman et al., 2015), absenteeism and job dissatisfaction (Ratrout & Hamdan-Mansour, 2018). Finally, compassion satisfaction relates to a

sense of gratification that comes from being able to do one's work effectively and subsequently relieve the suffering of others (Stamm, 2005; Radley & Figley, 2007; Sinclair et al., 2016).

CF is primarily experienced by those involved in the long-term care of individuals in health and social care settings (Sabo, 2011; Cavanagh et al., 2020). Across various studies looking at the consequences of CF in healthcare staff, it has been reported that if left unmanaged CF can lead to an increased desire to leave the profession (Arimon-Pages et al., 2019; Wells-English et al., 2019; Pérez-García et al., 2021), higher levels of job stress, dissatisfaction (Kim et al., 2017) and increased irritability with patients (Dasan et al., 2015).

Previous research has also found a link between organizational factors and CF in healthcare staff, including work overload, supervisory support, training (Singh et al., 2020), hours worked and, years of experience (Wang et al., 2020). However, despite CF representing a direct threat to the wellbeing of staff who work with individuals who have ID and behaviours that challenge, there is limited understanding of how the vulnerability factors of staff relate to CF.

Attachment Orientations

Attachment theory provides a promising theoretical framework for understanding the development of CF in staff working with people who have ID and behaviours that challenge. Attachment theory offers a distinct relational perspective to the study of behaviour, and it provides a compelling explanation for why individuals differ in their responses during times of increased stress (Bowlby, 1973). Adult attachment orientations are categorised as secure or insecure. Individuals with a secure attachment have positive internal working models of self and others and have high self-confidence and assurance that others will be available to provide support (Pietromonaco et al., 2006). On the other hand, insecure attachments can be conceptualised in terms of avoidance and anxiety orientations. Those with an avoidant attachment have negative internal working models of others, socially withdraw, and display an excessive need for self-sustenance (Brennan et al., 1998). Those with an anxious attachment, have negative internal working models of self and a persistent need for approval and closeness (Brennan et al., 1998).

Attachment theory has been used to examine different contexts, including work (Harms, 2011; Tziner et al., 2014; West, 2015). Previous research in psychiatric care staff has found a link between higher levels of attachment avoidance and anxiety in staff and poorer psychological mindedness, poorer quality staff-patient relationships and poorer staff-patient interactions (Berry et al., 2008; Bucci et al., 2016). Additionally, a study on professional counsellors suggested a link between anxious and avoidant attachment orientations and hostile and distancing countertransference (Mohr et al., 2005). Furthermore, findings have suggested that anxious attachments are positively correlated with CF, whereas results for the relationship between avoidant attachment and CF have been inconsistent (West, 2015). To our knowledge no studies have specifically focused on the relationship between CF and the attachment orientation of staff who work with people who have ID.

Attachment, Coping Self-Efficacy & Compassion Fatigue

Another significant aspect of attachment theory is the understanding of how individuals cope during times of stress and several studies have suggested an association between attachment orientations and coping (Mikulincer & Florian, 1995; Ognibene & Collins, 1998). Coping requires an individual to appraise and manage a demanding situation. It involves using both behavioural and cognitive responses, which can either be problem-focused or emotion-focused (Lazarus & Folkman, 1984). Problem-focused coping refers to strategies that focus on changing the challenging situation, whereas emotion-focused coping refers to strategies that focus on managing the emotional reaction to the challenging situation (Herman & Tetrick, 2009).

Individuals with an anxious attachment have been linked with extreme distress when having to cope with stressful situations, as they will ineffectively use emotion focused coping (Mikulincer & Florian, 1995). Additionally, they tend to overreact to challenging situations and exaggerate the extent of the difficulty and their inability to cope (Berry & Kingswell, 2012; Mikulincer et al., 2003) suggesting that they may have reduced levels of coping self-efficacy. Coping self-efficacy refers to an individual's positive belief about their capabilities to cope with a stressful event (Schwarzer & Renner, 2000; Chesney et al., 2006). In contrast, individuals with high attachment avoidance, are

more likely to use distraction-oriented coping techniques and suppress negative emotions (Birnbaum et al., 1997; Shaver & Mikulincer, 2007). However, it is unclear whether those with high attachment avoidance are downplaying the distress they feel or whether they have higher levels of coping self-efficacy.

With respect to the relationship between coping self-efficacy and CF little is known. Nevertheless, previous studies evaluating the role of coping skills on CF found that positive coping negatively predicted burnout, and positively predicted compassions satisfaction (Jacobson, 2012). Additionally, a study among nurses found that higher levels of coping self-efficacy were associated with lower levels of burnout (Pisanti et al., 2008). Therefore, theoretically speaking coping self-efficacy and CF (i.e., burnout and secondary traumatic stress) should be negatively correlated, and it is anticipated that the effect of one's attachment orientation on CF would be mediated through their coping self-efficacy. However, to date, no studies have examined the relationship between CF, attachment orientations and coping self-efficacy in staff working with people who have ID and behaviours that challenge.

Present Study

It is recognised that working with individuals who have ID and behaviours that challenge is stressful (Lundström et al., 2007) and a link between behaviours that challenge, and burnout has been found (Kapsokavadi & Beail, 2022). However, although existing studies have explored the association between attachment orientations and CF (West, 2015), no studies have explored this association in staff working with individuals who have ID and behaviours that challenge. This study aims to address this gap in the literature. Furthermore, this study aimed to explore the mediating role of coping self-efficacy on the relationship between attachment orientation and CF.

In the light of existing literature, it was hypothesised that:

Hypothesis 1. Increased burnout would be associated with increased anxious and avoidant attachment and reduced coping self-efficacy.

Hypothesis 2. Increased secondary traumatic stress would be associated with increased anxious and avoidant attachment and reduced coping self-efficacy.

Hypothesis 3. Reduced compassion satisfaction would be associated with increased anxious and avoidant attachment and reduced coping self-efficacy.

Hypothesis 4. Coping self-efficacy will mediate the relationship between both attachment orientations and burnout.

Hypothesis 5. Coping self-efficacy will mediate the relationship between both attachment orientations and secondary traumatic stress.

Hypothesis 6. Coping self-efficacy will mediate the relationship between both attachment orientations and compassion satisfaction.

Figure 1 depicts the relationships among the main study variables.

Figure 1

Theoretical Path Model Depicting Relationships Among Study Variables
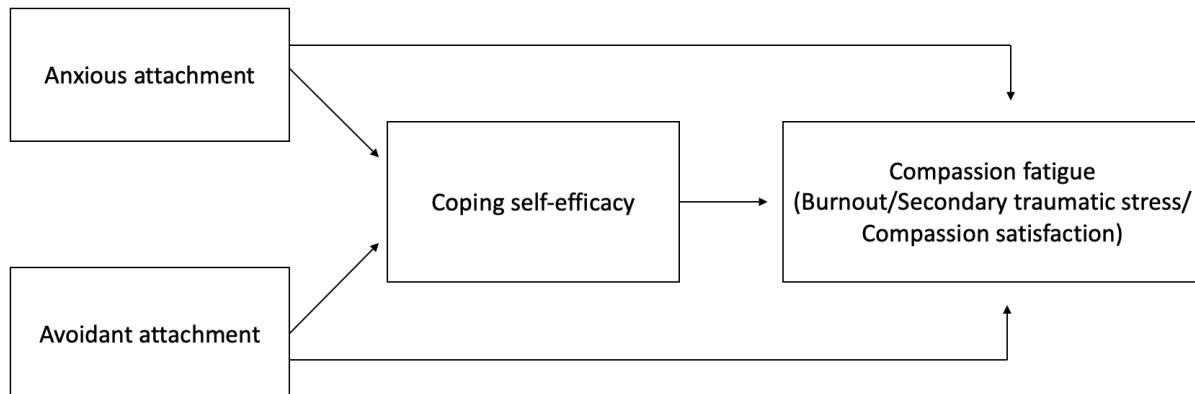
Method

Design

The current study employed a quantitative methodology and a within-subject cross-sectional design. Data were gathered directly from staff working with people who have ID, using a battery of self-report questionnaires via an online survey hosted by Qualtrics.

Recruitment

A purposive sample method was employed to recruit staff working with individuals who have a diagnosed ID and behaviours that challenge. Staff working in a variety of services including both the National Health Service (NHS) and the private sector were recruited in order the increase the generalisability of the results.

Participants were recruited from seven NHS trusts across England and Wales via email. To recruit participants from the private sector the study was advertised on social media, in private special interest groups for staff working with people who have ID.

Participants had to be 18+ years old. All participants were expected to have been working with people who have ID and with at least one individual who displays behaviours that challenge. Participants who worked in solely administrative or clerical roles were excluded.

Participant Characteristics

A total of 136 individuals accessed the online survey. Individuals who indicated they did not work with adults who have ID and behaviours that challenge, within screening questions, were directed to the end of the survey. Of the 136, 104 (76.47%) met the eligibility criteria and completed all study questionnaires. Participant ages ranged from 19 to 64, with a mean age of 38.96 years (SD = 10.95). The majority of participants were female (88.5%), married (51%) and identified as "white/white British" (95.2%). See Table 1.

In terms of the occupation, majority of the participants were nurses (46.2%), held a post-graduate qualification (47.1%) and worked in community learning disability teams (37.5%). Participants had been in their current post for approximately 5 years, ranging from 0 to 33.6 years.

Participants' experience working in ID services was approximately 14.5 years, ranging from 0 to 40 years (see Tables 2 and 3).

Regarding ID, the majority of participants worked with all levels of ID (62.5%), with some (33.6%) working only with mild/moderate (IQ = 41 – 70) and a small percentage (1.9%) only with severe/profound (IQ < 40). Finally, in terms of behaviours that challenge, the most frequently reported was 'aggressive/destructive' behaviour (95.2%) (Table 4).

Table 1

Participant Demographic Information

	Description	n	%
Gender	Male	10	9.6%
	Female	92	88.5%
	Transgender male	1	1%
	Gender variant/ non-conforming	1	1%
Ethnicity	White/ White British	99	95.2%
	Black/ African/ Caribbean/ Black British	1	1%
	Asian/ Asian British	2	1.9%
	Prefer not to say	2	1.9%
Marital Status	Married	53	51%
	Widowed	2	1.9%
	Divorced	4	3.8%
	Separated	5	4.8%
	Never married	17	16.3%
	In a domestic or civil partnership	13	12.5%
	Other	6	5.8%
	Prefer not to say	4	3.8%
Qualification	GSCE (or equivalent)	6	5.8%
	A-level (or equivalent)	8	7.7%
	First degree	36	34.6%
	Post-graduate qualification	49	47.1%
	Other	5	4.8%

Table 2

Participant Characteristics - Continuous

Variable	n	Mean	SD	Min	Max
Length of employment (months)	104	57.02	69.24	1	404
Length of experience in ID services (months)	104	172.52	128.20	2	480
Hours worked	104	36.15	12.48	0	70
Hours spent with individuals who have an ID	101	21.07	13.91	1	50
Supervisory support satisfaction	104	3.07	.791	1	4
Training satisfaction	104	2.92	.855	1	4

Note. SD, standard deviation

Table 3

Participant Characteristics - Categorical

	Description	n	%
Setting	Community learning disability team	39	37.5%
	Inpatient service	16	15.4%
	Intensive support service	15	14.4%
	Residential service	14	13.5%
	Forensic setting	9	8.7%
	Other	10	9.6%
	Missing	1	1%
Occupation	Nurse	48	46.1%
	Psychologist	27	25.9%
	Support worker	20	19.2%
	Occupational therapist	3	2.8%
	Physiotherapist	3	2.8%
	Assistant psychologist	1	1%
	Speech and language therapist	1	1%
	Therapy assistant	1	1%

Table 4

Characteristics of Individuals Who Have ID

	Description	n	%
Level of ID	Mild/ moderate	36	34.6%
	Profound/ severe	2	1.9%
	All levels	65	62.5%
	Missing	1	1%
Aggressive/ destructive behaviours	Yes	99	95.2%
	No	5	4.8%
Self-injurious behaviours	Yes	87	83.7%
	No	17	16.3%
Stereotyped behaviours	Yes	72	69.2%
	No	32	30.8%

Statistical Power

A priori power analysis (using G-POWER 3.1.5; Faul et al., 2009) was conducted to determine the sample size. Based on using multiple linear regression, with a medium sized effect (.15), power set at the recommended .8 (Cohen, 2013) and alpha at .05, with three tested predictors and a total number of six predictors, the recommended minimum sample size was 77 to achieve 80% power. The medium effect size was chosen because available studies (Racanelli, 2005; Zerach, 2013), which have examined the relationship between attachment orientations and CF, have reported medium effect sizes. Thus, the obtained sample of 104 is adequate to test the study hypotheses.

Ethical Issues

Ethical approval was obtained from the Department of Psychology Research Ethics Committee, University of Sheffield (Appendix A), and from the NHS Health Research Authority (Appendix B). Scientific approval was also obtained from the University of Sheffield (Appendix C).

Participation was voluntary and participants were asked to provide informed consent to complete the study. Participants were informed that they could cease their participation at any time.

However, they were informed that submitted surveys were automatically anonymised and thus not identifiable for removal.

Participants were given the opportunity to enter a draw to win a £25 voucher as an incentive to complete the study. This amount was proportionate to the extent of burden of participation and did not risk compromising participants' decision to participate (British Psychological Society, 2021). The prize draw winner was randomly selected and was notified by e-mail. Emails were deleted once the winner was selected (February 2022).

Quantitative data were extracted, and automatically anonymised, from the online survey platform with which the project questionnaires were disseminated. During the study data were securely stored electronically and no hard file copies were kept.

Measures

Demographic Information (Appendix D)

Participants completed a demographic questionnaire that included questions about age, gender, ethnicity, marital status, occupation, highest level of qualification, length of current employment, length of time working in ID services, type of service, hours worked, hours spent with people who have ID, types of behaviours that challenge and, level of ID of the persons staff work with. Additionally, staff rated two statements relating to supervisory support and training satisfaction on a 4-point scale (1= *strongly disagree*, 4=*strongly agree*).

Attachment Orientation

Attachment orientation was assessed using the Experiences in Close Relationships Scale – Short form (ECR-S; Brennan et al., 1998; Appendix E). The ECR-S is a 12-item questionnaire derived from the original 36-item ECR (Brennan et al., 1998) (1 = *disagree strongly*, 7 = *agree strongly*). Six items assess attachment avoidance, and six items assess attachment anxiety. Higher scores for each subscale indicate either greater avoidance or greater anxiety. Previous use of the scale has demonstrated reliability of the scale and psychometric evaluations have found strong construct validities and internal consistencies ranging from .78 to .88 and .77 to .86 for the avoidance and

anxiety subscales respectively (Wei et al., 2007). In the current study, the Cronbach's alpha coefficient for avoidant attachment was .69 and for anxious attachment it was .77. As the avoidant attachment scale alpha did not meet conventional levels of acceptability (i.e., .7 and above; Robson, 2002), the results involving this scale should be interpreted with caution.

Coping Self-Efficacy

Coping self-efficacy was assessed using the Coping Self-Efficacy Scale (CSES; Chesney et al., 2006; Appendix F). The CSES is a 26-item measure which assess a person's perceived ability to cope effectively with life challenges. Participants are asked to rate the extent to which they believe they can perform behaviours related to adaptive coping on an 11-point scale ranging from 0 (*"cannot do at all"*) to 10 (*"certain can do"*). An overall coping self-efficacy score is created by summing the item ratings. Internal consistency and test–retest reliability is strong for all three factors. Previous studies have found the CSES to demonstrate strong psychometric properties including good concurrent validity and reliability ranging from .79 to .92 (Chesney et al., 2006). In the current study, the Cronbach's alpha coefficient for coping self-efficacy was .96.

Compassion Fatigue

CF was measured using the Professional Quality of Life Scale (ProQOL; Stamm, 2010; Appendix G). The ProQOL is a 30-item scale which assesses CF. The ProQol breaks into three parts: Burnout, Secondary Traumatic Stress and Compassion Satisfaction. Participants are asked to rate questions on a 5-point scale (1 = *never*, 5 = *very often*). Ten items assess burnout, ten items assess secondary traumatic stress, and ten items assess compassion satisfaction. Over 200 works have demonstrated the construct validity of the ProQOL and reliability of the scales has been reported to be good to very strong with alphas of .75 (burnout), .81 (secondary traumatic stress), and .88 (compassion satisfaction) (Stamm, 2010). In the current study, the Cronbach's alpha coefficient for burnout was .79, for secondary traumatic stress .88., and for compassion satisfaction .90.

Public Involvement

Prior to seeking ethical approval, a consultation with ID staff, was carried out via email to ensure active public involvement (Appendix H). Feedback suggested that this research was of interest and importance to the staff. The following changes were carried out as a result: the focus of the study was changed from 'burnout' to 'compassion fatigue', including a change in how this is measured; a change in terminology was made from 'challenging behaviour' to 'behaviours that challenge'; addition of questions regarding supervisory support and training satisfaction; addition of questions relating to hours worked/ time spent with people who have ID; and addition of questions relating to types of behaviours that challenge.

Procedure

The recruitment advertisements and emails sent (Appendix I) included a hyperlink and a QR code which directed individuals to the information sheet (Appendix J). Individuals who met inclusion criteria were asked to complete a consent form (Appendix K) by checking a box to either agree to take part or not. Participants who consented where then asked to complete a demographic questionnaire, the ECR-S (Wei et al., 2007), the ProQOL (Stamm, 2010) and the CSES (Chesney et al., 2006). Once participants had completed all study questionnaires, they were directed to a debrief page (Appendix L). Participants were also provided with the opportunity to enter the prize draw.

Data Analysis

The dataset was analysed using IBM SPSS statistics (Version 27). The dataset was firstly checked for missing data. Participants were not required to complete demographic questions, however, participants who did not complete all other measures were excluded from the study.

Data Screening

The data were screened for outliers and outliers were calculated as more than 3.29 standard deviations from the mean (in line with Field, 2013). All responses were assessed for errors (i.e., data is within the range of possible scores and/or there is a consistent pattern across questionnaires). All dependent variables (i.e., burnout, secondary traumatic stress, compassion satisfaction) were assessed

to determine normality. Normality was assessed by visually inspecting the histogram and Q-Q plots, and by the tests of skewness, kurtosis, and the Shapiro-Wilk's W test.

Bivariate Analyses

Correlations (i.e., Pearson's r and Spearman's rho, as appropriate) were carried out, to examine the relationships between continuous demographic variables and the dependent variables. Independent sample t-tests or Mann-Whitney U tests (as appropriate to the data) were used to assess differences between dichotomous demographic variables and the dependent variables. One-way ANOVAs were carried out, as appropriate, to assess differences between categorical demographic variables and the dependent variables.

Correlational Analyses

Spearman's rho correlations were performed on the data to test hypotheses one, two and three.

Multiple Linear Regressions

Before testing the mediational models for this study, three multiple linear regression analyses were completed. These were carried out to determine the strongest predictors of burnout, secondary traumatic stress, compassion satisfaction

Demographic variables found to be significant in the bivariate analyses were entered into a forced-entry regression analyses for each dependent variable to determine which predictor variables would be entered into the final regression models. This helps enhance the accuracy of the final model, by reducing the number of non-significant variables entered into each regression (Field, 2013). Next, separate regression analyses (blockwise entry) were completed for each dependent variable (i.e., burnout, secondary traumatic stress, and compassion satisfaction). Blocks were conceptualised as follows:

Block 1. Demographic variables

Block 2. Coping self-efficacy

*Block 3*. Attachment orientations (anxious attachment and avoidant attachment)

Prior to interpretation of the regression analyses, assumptions for multiple linear regressions were checked. This included normality, linearity, and homoscedasticity of residuals. Collinearity in the data and independence of observations were also examined.

Mediation Analyses

Mediation analyses were carried out on SPSS using PROCESS macro (Hayes, 2013). Mediation analysis assumes that the relationship between the independent variables (X) and the dependent variable (Y) is influenced by the mediator variable (M) and thus the relationship is assumed to be indirect (Hayes, 2013; see Figure 2).

Figure 2

Mediation Model
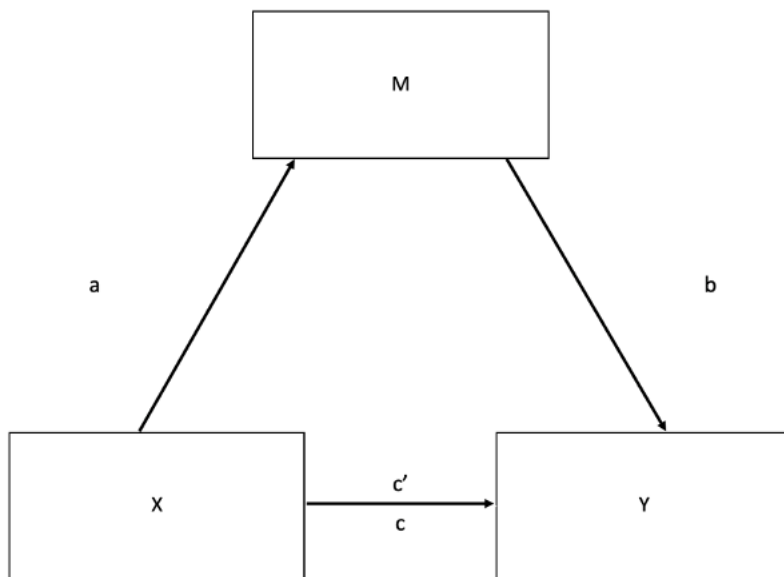
Note. a (path a), correlation between X and M. b (path b), correlation between M and Y. c (path c), total effect. c' (path c'), direct effect.

Two mediation analyses were carried out to investigate the hypotheses that coping self-efficacy mediates the relationship between attachment orientations and burnout (Hypothesis 4). Additionally, two mediation analyses were carried out to investigate the hypotheses that coping self-efficacy mediates the relationship between attachment orientations and secondary traumatic stress, (Hypothesis 5). Similarly, two mediation analyses were carried out to investigate the hypotheses that coping self-efficacy mediates the relationship between attachment orientations and compassion satisfaction (Hypothesis 6). All mediation analyses controlled for possible covariates.

Bootstrapped confidence intervals were computed for the indirect effects. The bootstrapping procedure does not assume normality of the data and allows for greater statistical power, whilst reducing the probability of Type I error (Thimm, 2010). Bias-corrected and accelerated bootstrap confidence intervals (BCa) were set at .95 with 5000 resamples (Hayes, 2009). Indirect effects were assessed even if no direct effects were found (Hayes, 2009; Zhao et al., 2010). Co-variates for all mediation analyses were added based on whether they were significant predictors of the dependent variables.

Results

Data Screening

During data screening, one outlier was identified. However, the data were within the range of possible scores and there was a consistent pattern across questionnaires. Therefore, it was determined that the outlier detected was representative of the participant's true scores and as a result was neither remover nor modified (in line with Field, 2013).

Visual inspections of the histograms and Q-Q plots indicated that secondary traumatic stress was positively skewed, and compassion satisfaction was negatively skewed. (Appendix M - O). The Shapiro-Wilk test also indicated that there was a significant departure from normality for secondary traumatic stress W (104) = .952, $p < .001$, skewness ($z = .734$) and kurtosis ($z = .072$). Compassion satisfaction was also significantly non-normal W (104) = .972, $p = .024$, skewness ($z = -.255$) and

kurtosis (z = - .62). Burnout was found to be normally distributed W (104) = .978, p = .08, skewness (z = .552) and kurtosis (z = .505).

In light of these results, secondary traumatic stress and compassion satisfaction scores were log transformed. For secondary traumatic stress, this reduced the skewness value (z = .091) and kurtosis value (z = -.556). The Shapiro-Wilk test also indicated normality W (104) = .987, p = .426 (Appendix P). Therefore, transformed scores were included in subsequent analyses. For compassion satisfaction, logarithmic transformation did not improve normality and thus, non-transformed values were included in subsequent analyses. (Appendix Q).

Descriptive Statistics

Means and standard deviations for the study variables are included in Table 5.

Bivariate Analyses

Prior to further analyses, occupational therapists, physiotherapists, therapy assistants and speech and language therapists were grouped into an overarching 'allied health professionals' occupation. Additionally, psychologists and assistant psychologists were grouped into an overarching 'psychologists' occupation.

Table 5

Descriptive Statistics

Variable	n	Mean	SD	Min	Max
Anxious attachment	104	3.48	1.17	1	6.33
Avoidant attachment	104	2.92	.97	1	5.33
Coping self-efficacy	104	154.9	43.88	44	255
Burnout	104	25.35	5.85	13	45
Secondary traumatic stress	104	23.95	7.39	12	46
Compassion satisfaction	104	39.82	6.05	25	50

Note. n, number of participants. *SD*, standard deviation.

Burnout

Independent samples t-tests were carried out for all dichotomous independent variables and burnout. No significant differences in burnout were found between staff working with aggressive behaviours and those not, those working with self-injurious behaviours and those not, as well as those working with stereotyped behaviours and those not.

Correlations using Pearson's r were carried out between continuous variables and burnout (Table 6). One-way ANOVAs were carried out between burnout and the categorical variables. No significant differences in burnout were found for gender, ethnic group, occupation, qualification, marital status, client's level of ID, and type of setting.

Secondary Traumatic Stress

Independent samples t-tests were carried out for all dichotomous independent variables and secondary traumatic stress. A significant difference in secondary traumatic stress was found between those working with stereotyped behaviours and those not (t (102) = 2.783, p = .006). Results showed higher levels of secondary traumatic stress in those working with stereotyped behaviours. No significant differences in secondary traumatic stress were found between those working with aggressive behaviours and those not, as well as those working with self-injurious behaviours and those not.

Correlations using Pearson's r were carried out between continuous variables and secondary traumatic stress (Table 6).

One-way ANOVAs were carried out between categorical variables and secondary traumatic stress. Results provided evidence of a differences between occupations (F (3,103) = 3.636 p = .015). Pairwise comparisons were carried out for each pair of groups. Significant differences were found between nurses and psychologists (p = .008). There was no evidence of a difference between the other pairs. No significant differences were found for secondary traumatic stress and gender, marital status, ethnic group, qualification, level of ID and type of setting.

Table 6

Pearson's Correlation Matrix for Demographic Variables, Burnout and Secondary Traumatic Stress

Demographic Variable	BO	STS
Age	- .041	- .183
Time in role (months)	- .003	- .112
Experience in services for people who have ID (months)	- .031	- .074
Time spent with people who have ID (hours)	.297**	.391**
Hours worked	.201*	.213*
Supervisory support satisfaction	- .586**	- .474**
Training satisfaction	- .388**	- .292**

Note. BO, Burnout. STS, Secondary traumatic stress. n = 104.

*p < .05. **p < .01.

Compassion Satisfaction

As there was a significant departure from normality for compassion satisfaction, non-parametric testing was employed. Mann-Whitney U tests were carried out for each dichotomous variables and compassion satisfaction. No significant differences in compassion satisfaction were found between those working with aggressive behaviours and those not, those working with self-injurious behaviours and those not, and those working with stereotyped behaviours and those not.

Bivariate correlations using Spearman's rho were carried out between continuous variables and compassion satisfaction (Table 7).

The Kruskal-Wallis one-way analysis of variance test was carried out between categorical variables and compassion satisfaction. No significant differences were found for compassion satisfaction and gender, occupation, marital status, ethnic group, qualification, level of ID and type of setting.

Correlational Analyses

Correlations using Spearman's rho were carried out to test the study's hypotheses one, two and three (Table 8). All variables correlated with each other to a certain degree.

Table 7

Spearman's Correlation Matrix for Demographic Variables and Compassion Satisfaction

Demographic Variable	Compassion Satisfaction
Age	-1.51
Time in role (months)	- .087
Experience in services for people who have ID (months)	- .035
Time spent with people who have ID (hours)	.484
Hours worked	.160
Supervisory support satisfaction	.473*
Training satisfaction	.401*

Note. n = 104

p < .01.

Table 8

Spearman's Correlation Matrix for Study Variables

	1	2	3	4	5	6
1. Burnout	-					
2. Secondary traumatic stress	.687 ***	-				
3. Compassion satisfaction	-.701***	-.314**	-			
4. Anxious attachment	.455***	.478***	-.294**	-		
5. Avoidant attachment	.301**	.280**	-.228*	.319***	-	
6. Coping self-efficacy	-.519**	-.344***	.485***	-.514***	-.328**	-

Note. n = 104

* *p* < .05. ***p* < .01. ***p* < .001.

Multiple Regression Analyses

To explore to what extent attachment orientations were associated with CF, three multiple linear regression analyses were carried out for each of the dependent variables.

The data met the assumption of independent errors (Durbin-Watson value for burnout = 1.88; for secondary traumatic stress = 1.55; for compassion satisfaction = 2.013) suggesting that the data

were not autocorrelated. Additionally, visual inspection of the scatterplots of standardised residuals showed that the data met the assumptions of normality and homoscedasticity (Appendix R - T). No multicollinearity was observed in the data (Appendix U).

Burnout (Table 9)

Forced-entry regression analysis of all the demographic variables, found that only supervisory support satisfaction was a significant predictor of burnout.

In the main analysis, the results show that Model 1 explained 34.3% (33.7% adjusted) of the variance of burnout [F (1,102) = 53.252, p < .001]. Regression coefficients showed that supervisory support satisfaction predicted burnout (p < .001). Model 2 improved significantly (p < .001) the prediction of burnout [F (1,101) = 46.667, p < .001, R^2 change = .137]. Tests associated with the regression coefficients showed that supervisory support satisfaction (p < .001) and coping self-efficacy (p < .01) made a significant contribution to predicting burnout.

Table 9

Hierarchical Multiple Regressions for Burnout

	B	SE B	Beta	t	p
Model 1					
Supervisory support satisfaction	-4.33	.593	- .586	-7.297	< .001
Model 2					
Supervisory support satisfaction	-3.465	.556	-.469	-6.229	< .001
Coping self-efficacy	- .052	.01	- .389	-5.165	< .001
Model 3					
Supervisory support satisfaction	-3.247	.552	- .439	-5.886	< .001
Coping self-efficacy	- .035	.011	- .26	-3.039	.003
Anxious attachment	1.036	.421	.207	2.46	.016
Avoidant attachment	.468	.469	.078	.999	.320

Note. SE, standard error. n = 104.

Finally, Model 3 also improved significantly ($p = .017$) the prediction of burnout [$F(1,99) = 26.931$, $p < .001$, adjusted R^2 change $= .041$]. Altogether, 52.1% (50.2% adjusted) of the variability in burnout was predicted by supervisory support satisfaction ($p < .001$), coping self-efficacy ($p = .002$) and anxious attachment ($p = .012$).

Secondary Traumatic Stress (Table 10)

Forced-entry regression analysis of the demographic variables, found that supervisory support satisfaction and stereotyped behaviours were significant predictors of secondary traumatic stress.

The results of the main regression showed that Model 1 explained 25.5% (24% adjusted) of the variance of secondary traumatic stress [$F(2, 101) = 17.259$, $p < .001$]. After controlling for Model 1, Model 2 significantly improved ($p = .002$) the prediction of secondary traumatic stress [$F(1, 100) = 16.008$, $p < .001$, R^2 change$= .070$]. Model 3 also significantly improved ($p = .001$) the prediction of secondary traumatic stress [$F(2,98) = 13.783$, $p < .001$, R^2 change$= .088$]. The final Model explained 41.3% (38.3% adjusted) of the variance of secondary traumatic stress. Tests associated with the regression coefficients showed that supervisory support satisfaction ($p < .001$), stereotyped behaviours ($p = .009$) and anxious attachment ($p < .001$) made a significant contribution to predicting secondary traumatic stress.

Table 10

Hierarchical Multiple Regressions for Secondary Traumatic Stress

	B	SE B	Beta	t	p
Model 1					
Supervisory support satisfaction	-.072	.014	-.431	-4.996	<.001
Stereotyped behaviours	-.063	.024	-.222	-2.568	.012
Model 2					
Supervisory support satisfaction	-.057	.014	-.346	-3.986	<.001
Stereotyped behaviours	-.68	.023	-.240	-2.894	.005
Coping self-efficacy	-.001	.000	-.278	-3.212	.002

	B	SE B	Beta	t	p
Model 3					
Supervisory support satisfaction	-.053	.014	-.32	-3.838	<.001
Stereotyped behaviours	-.059	.022	-.209	-2.662	.009
Coping self-efficacy	.000	.00	-.089	-.926	.357
Anxious attachment	.039	.011	.345	3.665	<.001
Avoidant attachment	.004	.012	.033	.379	.706

Note. SE, standard error. Stereotyped behaviours are coded "1" = yes, "2" = no. n = 104.

Compassion Satisfaction (Table 11)

Turning to compassion satisfaction, forced-entry regression analysis of the demographic variables, found that only supervisory support satisfaction was a significant predictor of compassion satisfaction.

Table 11

Hierarchical Multiple Regressions for Compassion Satisfaction

	B	SE B	Beta	t	p
Model 1					
Supervisory support satisfaction	3.848	.654	.503	5.884	<.001
Model 2					
Supervisory support satisfaction	2.947	.622	.386	4.740	<.001
Coping self-efficacy	.054	.011	.391	4.812	<.001
Model 3					
Supervisory support satisfaction	2.974	.642	.389	4.634	<.001
Coping self-efficacy	.053	.013	.386	4.014	<.001
Anxious attachment	-.130	.490	-.025	-.264	.792
Avoidant attachment	.159	.545	.026	.293	.770

Note. SE, standard error. n = 104.

The results showed that Model 1 explained 25.3% (adjusted 24.6%) of the variance of compassion satisfaction [F (1,102) = 34.623, p < .001]. Regression coefficients showed that supervisory support satisfaction predicted compassion satisfaction (p < .001). After controlling for Model 1, Model 2 significantly improved the prediction of compassion satisfaction [F (1,101) = 32.648, p < .001, R^2 change= .139], explaining 38.1% of the variance. Tests associated with the regression coefficients showed that supervisory support satisfaction (p < .001) and coping self-efficacy (p < .001) made a significant contribution to predicting compassion satisfaction. Model 3 did not significantly improve (p = .938) the prediction of compassion satisfaction (F (2,99) =16.054, p < .001).
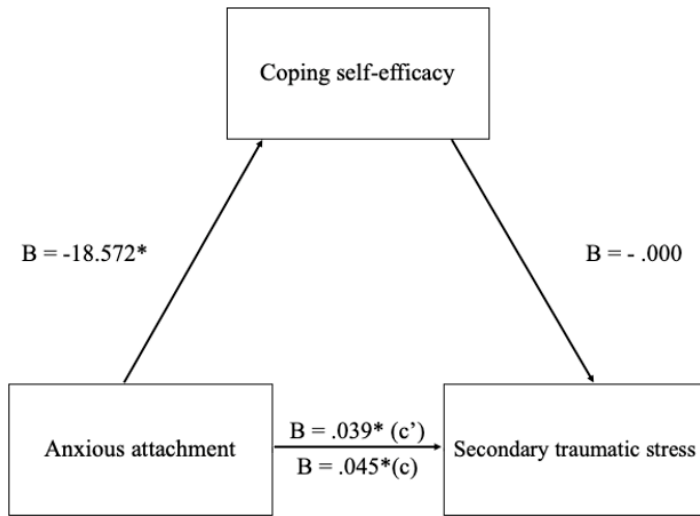
Mediation Analyses

Burnout

Two mediation analyses were performed to test the mediating effect of coping self-efficacy on the relationship between attachment orientations and burnout.

Anxious attachment. Results indicated that anxious attachment acted as a significant predictor for coping self-efficacy (path a) B = -18.386, SE = 3.152, p < .001 Coping self-efficacy significantly predicted burnout (path b) B = - .036, SE = .011, p = .002. The effect of anxious attachment on burnout (path c), B = 1.793, SE = .373, p < .001, was reduced but remained significant when controlling for coping self-efficacy (path c'), B = 1.124, SE = .412, p = .008. Bootstrapping procedures indicated that there was a significant indirect effect of anxious attachment on burnout through coping self-efficacy b = .67, 95% BCa CI [.305 to 1.122], thereby indicating partial mediation. All variables in the model accounted for 51.6% of the total effect of anxious attachment on burnout (see Figure 3).

Figure 3

Mediation of Association Between Anxious Attachment and Burnout via Coping Self-Efficacy
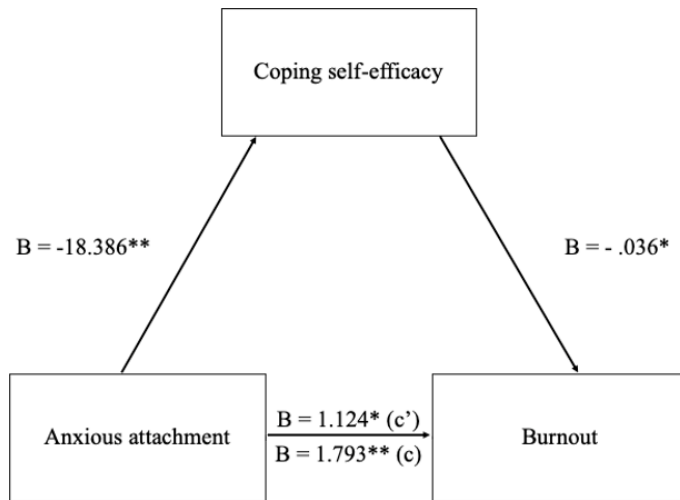
Note. Analysis included supervisory support satisfaction as a covariate (not pictured here). Bootstrapping with 5000 samples. n = 104.

*p < .01. **p < .001.

Avoidant attachment. Results indicated that avoidant attachment acted as a significant predictor for coping self-efficacy (path a) *B* = -13.04, *SE* = 4.295, *p* = .003. Coping self-efficacy significantly predicted burnout (path b) *B* = - .047, *SE* = .010, *p* < .001. The effect of avoidant attachment on burnout (path c) was significant (*B* = 1.324, *SE* = .491, *p* = .008) but did not remain significant when controlling for coping self-efficacy (path c'), *B* = .708, *SE* = .469, *p* = .135. Bootstrapping procedures indicated that there was a significant indirect effect of avoidant attachment on burnout through coping self-efficacy *b* = .616, 95% BCa CI [.184 to 1.094], thereby indicating full mediation. All variables in the model accounted for 49.2% of the total effect of avoidant attachment on burnout (see Figure 4).

Figure 4

Mediation of Association Between Avoidant Attachment and Burnout via Coping Self-Efficacy
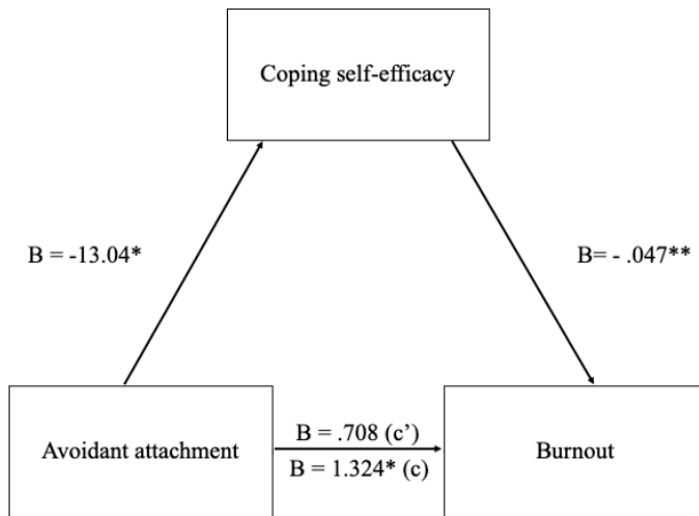
Note. Analysis included supervisory support satisfaction as a covariate (not pictured here). Bootstrapping with 5000 samples. n = 104.

p < .01. **p* < .001.

Secondary Traumatic Stress

Two mediation analyses were performed to test the mediating effect of coping self-efficacy on the relationship between attachment orientations and secondary traumatic stress.

Anxious attachment. Results indicated that coping self-efficacy did not mediate the relationship between anxious attachment and secondary traumatic stress (see Figure 5).

Avoidant attachment. Results indicated that avoidant attachment acted as a significant predictor for coping self-efficacy (path a) *B* = -13.102, *SE* = 4.305, *p* = .003. Coping self-efficacy significantly predicted secondary traumatic stress (path b) *B* = - .001, *SE* = .003, *p* = .007. However, the effect of avoidant attachment on secondary traumatic stress (path c) was not significant, *B* = .023, *SE* = .012, *p* = .058, and it remained non-significant when controlling for coping self-efficacy (path c'), *B* = .013, *SE* = .012, *p* = .279.], thereby indicating no mediation (see Figure 6).

Figure 5

Mediation of Association Between Anxious Attachment and Secondary Traumatic Stress via Coping Self-Efficacy

Note. Indirect effect *b* = .005, 95% BCa CI [- .008 to .018]. Analysis included supervisory support satisfaction and stereotyped behaviours as covariates (not pictured here). Bootstrapping with 5000 samples. n = 104.

*p < .001.

Figure 6

Mediation of Association Between Avoidant Attachment and Secondary Traumatic Stress via Coping Self-Efficacy
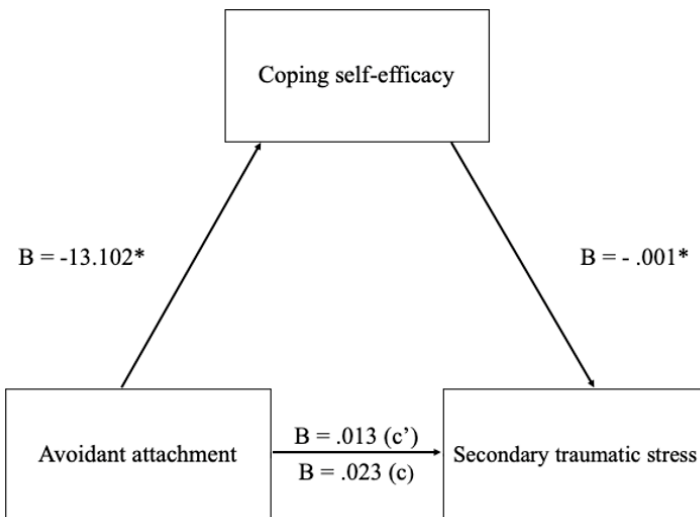
Note. Analysis included supervisory support satisfaction and stereotyped behaviours as covariates (not pictured here). Bootstrapping with 5000 samples. n = 104.

*p < .01.

Compassion Satisfaction

Two mediation analyses were performed to test the mediating effect of coping self-efficacy on the relationship between attachment orientations and compassion satisfaction.

Anxious attachment. Results indicated that anxious attachment acted as a significant predictor for coping self-efficacy (path a) B = -18.386, SE = 3.152, p < .001. Coping self-efficacy significantly predicted compassion satisfaction (path b) B = - .053, SE = .012, p < .001. The effect of anxious attachment on compassion satisfaction (path c) was significant, B = -1.067, SE = .443, p = .018, but it did not remain significant when controlling for coping self-efficacy (path c'), B = - .100, SE = .477, p = .835. Bootstrapping procedures indicated that there was a significant indirect effect of anxious attachment on compassion satisfaction through coping self-efficacy b = - .967, 95% BCa CI [-1.54 to - .475], thereby indicating full mediation. All variables in the model accounted for 29.4% of the total effect of anxious attachment on compassion satisfaction (see Figure 7).

Figure 7

Mediation of Association Between Anxious Attachment and Compassion Satisfaction via Coping Self-Efficacy
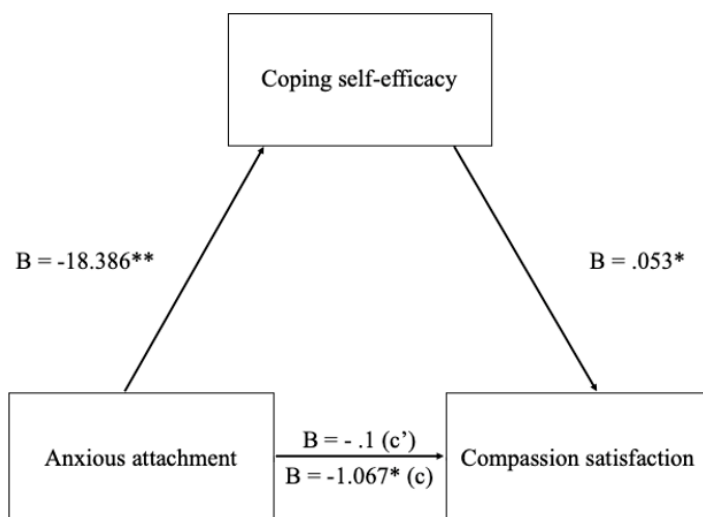
Note. Analysis included supervisory support satisfaction as a covariate (not pictured here). Bootstrapping with 5000 samples. n = 104.

p < .05. **p* < .001.

Avoidant attachment. Results indicated that avoidant attachment acted as a significant predictor for coping self-efficacy (path a) B = -13.04, SE = 4.295, p = .003. Coping self-efficacy significantly predicted compassion satisfaction (path b) B = .055, SE = .012, p < .001. However, the effect of avoidant attachment on compassion satisfaction (path c) was not significant (B = - .585, SE = .558, p = .297), and it remained non-significant when controlling for coping self-efficacy (path c'), B = .130, SE = .531, p = .808, thereby indicating no mediation (see Figure 8).

Figure 8

Mediation of Association Between Avoidant Attachment and Compassion Satisfaction via Coping Self-Efficacy
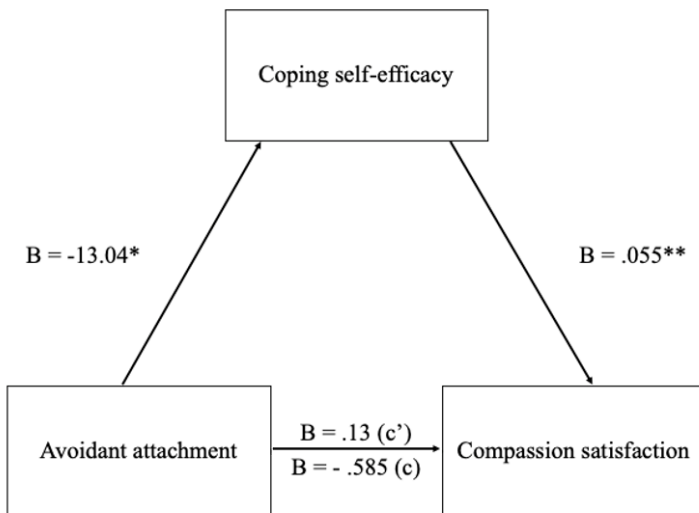
Note. Analysis included supervisory support satisfaction as a covariate (not pictured here). Bootstrapping with 5000 samples. n = 104.

p < .01. **p* < .001.

Supplementary Moderation Analyses

Where there was no mediation present, but there was evidence of correlation between the predictor variables, moderation analysis was carried out to further investigate the interaction.

A moderation analysis was conducted to investigate the effect of coping self-efficacy on the relationship between avoidant attachment and secondary traumatic stress with no significant effect observed (Appendix V).

A second moderation analysis was conducted to investigate the effect of coping self-efficacy on the relationship between avoidant attachment and compassion satisfaction. Coping self-efficacy was found to moderate the relationship between avoidant attachment and compassion satisfaction (Table 12). Simple slopes analysis (Appendix W) indicated that the relationship was positive and significant at low levels of coping self-efficacy (-49.328) and negative and significant at high levels of coping self-efficacy (55.401).

Table 12

Moderation Analysis of Coping Self-Efficacy on Avoidant Attachment and Compassion Satisfaction

	b	SE	t	p	LLCI	ULCI
Constant	30.211	1.957	15.435	< .001	26.326	34.093
Avoidant attachment	- .051	.518	- .099	.922	-1.079	.977
Coping self-efficacy	.052	.011	4.57	< .001	.03	.075
Avoidant attachment X Coping self-efficacy	- .028	.010	-2.770	< .007	- .048	- .008

Note. R^2= .437, *p* < .001. SE, standard error. Analysis included supervisory support satisfaction as a covariate. n =. 104.

Discussion

The current study aimed to examine the associations between CF, attachment orientations and coping self-efficacy in staff working with people who have ID and who display behaviours that challenge. Further, this study sought to explore whether coping self-efficacy mediated the relationship between CF and attachment orientations.

Consistent with the first three hypotheses, the findings showed that increased attachment anxiety and avoidance, and reduced coping self-efficacy, were related to increased burnout, increased secondary traumatic stress, and reduced compassion satisfaction. Nevertheless, it is important to note that covariates were not included in the correlational analyses and as a result during more complex analyses where covariates were included these associations were not maintained.

More specifically, although further analyses showed that increased anxious attachment was a significant predictor of burnout and secondary traumatic stress, avoidant attachment was not. This is consistent with the findings of Pardess et al. (2014), and in line with previous studies which have shown that unlike avoidant attachment, those with high anxious attachments are associated with increased vulnerability to stress reactions (Besser & Neria, 2011).

Regarding compassions satisfaction, findings from the multiple regression analyses showed that neither attachment orientation was a significant predictor. This outcome is contrary to that of previous studies which have found avoidant attachment to be a negative predictor of compassion satisfaction (Pardess et al., 2014; Zerach, 2013). However, it is possible that this inconsistency is a result of the moderate alpha level of avoidant attachment reported in the present study.

Lastly, concerning coping self-efficacy, our results found that it was a significant predictor of burnout and compassion satisfaction. Direct comparisons with other studies are not possible, as this was the first study to consider the relationship between coping self-efficacy and CF, however, previous studies evaluating the role of coping skills on CF found that positive coping negatively predicted burnout, positively predicted compassion satisfaction, and did not predict secondary traumatic stress (Jacobson, 2012).

On the question of coping self-efficacy as a mediator in the relationship between CF and attachment orientation our findings yielded mixed results. In line with our fourth hypothesis, mediation analyses showed that coping self-efficacy mediated the relationship between both attachment orientations and burnout. These findings can be explained in the context of existing theory and research relating to attachment orientations. Attachment theory proposes that individuals with avoidant attachments have negative internal working models of others and display an excessive need for self-reliance (Brennan et al., 1998). Thus, a possible explanation is that they are unlikely to employ adaptive coping strategies involving others, maintaining a belief that they can cope alone, which consequently leads to burnout. On the other hand, individuals with an anxious attachment are characterised as having negative internal working models of self (Mikulincer & Florian, 1995), which could lead them feeling hypervigilant, overwhelmed, and unable to regulate their own emotions, when witnessing behaviours that challenge. Previous research has also found that individuals with anxious attachments tend to overreact to challenging situations and exaggerate the extent of the difficulty and their ability to cope (Berry & Kingswell, 2012; Mikulincer et al., 2003). However, it is important to note that coping self-efficacy partially mediated the relationship between anxious attachment and burnout and thus, other mediating factors need to be considered, as well as the possibility that their relationship may not be mediated by other variables.

In relation to our fifth hypothesis, results showed that coping self-efficacy did not mediate the relationship between attachment orientation and secondary traumatic stress. This finding is contrary to previous studies which have found coping self-efficacy to mediate the relationship between attachment orientations and PTSD (Benoit et al., 2010; Morison & Benight, 2022). However, there are several differences which require attention. Previous studies have not focused on healthcare staff and have utilised alternative measures to quantify coping self-efficacy. Furthermore, the most notable difference relates to previous studies focusing on individual's experiences of direct trauma, as opposed to vicarious trauma. More specifically, whilst the direct experience of trauma leads to PTSD, secondary traumatic stress occurs from engaging empathetically with those who have experienced

trauma (Pearlman & Mac Ian, 1995) and the relationship between empathy and insecure attachments is not straightforward. It has previously been argued that those high on attachment anxiety can become preoccupied with their own needs and distress, leaving them unable to engage empathically with others (Mikulincer & Shaver, 2005). Additionally, individuals with an avoidant attachment avoid intimacy and have been linked to reduced empathy and willingness to help others (Mikulincer et al., 2001, 2005). Therefore, a probable explanation is that regardless of whether insecurely attached individuals feel able to cope with the suffering of others, their difficulties with forming close empathic relationships with those in need may be protecting them from experiencing symptoms of secondary traumatic stress.

Turning to the study's final hypothesis, the results showed that coping self-efficacy mediated the relationship between anxious attachment and compassions satisfaction. These findings suggest that individuals who are anxiously attached do not experience a sense of gratification from alleviating the suffering of others, when they feel unable to cope. A likely explanation is that because individuals with an anxious attachment tend to focus on their own distress (Mikulincer & Florian, 1995), they become so overwhelmed by their perceived inability to cope with their workplace challenges, that they are not able to experience a sense of accomplishment in the workplace.

Concerning the relationship between avoidant attachment and compassion satisfaction, coping-self efficacy was not found to be a significant mediator. However, further analysis showed that coping self-efficacy moderated this relationship. Results showed that at very low levels of coping self-efficacy there was a positive correlation between avoidant attachment and compassion satisfaction, and at very high levels there was a negative correlation. This finding was unexpected particularly as better coping strategies have previously been associated with increased compassion satisfaction (Al Barmawi et al., 2019). Nonetheless, in the literature avoidant attachment has been linked to repressive coping (Myers, 2000) and there is some evidence that individuals with a repressive coping style tend to present themselves in positive light on self-report measures (Vetere & Myers, 2002). It is therefore likely that avoidantly attached individuals in this study have downplayed

their difficulties and maintained an artificially positive view of their workplace experiences. However, caution is necessary when interpreting these results because of the moderate alpha level relating to the avoidant attachment scale.

Strengths & Limitations

From a theoretical perspective, this study fills a gap in the literature and extends the evidence that attachment theory is an imperative framework for understanding wellbeing in the workplace (Harms, 2011). Although other studies have considered the association of attachment orientation and CF (Zerach, 20013; Racanelli, 2005), this was the first study to focus on staff working in services for people who have ID and behaviours that challenge. It is also the first study to consider the mediating role of coping self-efficacy.

However, the findings of this study have to be seen in light of some limitations. Although a strength of the study is the use of validated and reliable measures, the main weakness of the results relates to the use of single self-report measures which introduce mono-method bias (Donaldson & Grant-Vallone, 2002). The use of multiple measures to define the constructs of CF could have been beneficial, as it has previously been suggested that no single measure can effectively capture the construct of CF (Bride et al., 2007). There is also an issue with the measure used to determine avoidant attachment, as the alpha level was found to be just below 0.7. Consequently, results relating to this measure may not be as reliable and as desired and should be interpreted with caution.

Moreover, the current study controlled for supervisory support, as previous literature has found that adequate supervision is a protective factor for CF (Singh et al., 2020), thus increasing the reliability of the results. However, supervisory support satisfaction was measured using a single-item measure to reduce burden from the responders and not by means of a validated questionnaire, reducing the validity and sensitivity of this construct. The Perception of Supervisory Support Scale (Fukui et al., 2014) would have been a more suitable alternative, as it has known psychometric properties and good content validity.

Furthermore, although participants were informed of the confidential nature of the study, there's a possibility that individuals may have understated their level of distress. Previous studies have found that there is perceived stigma and shame linked to healthcare staff disclosing poor wellbeing (Knaak et al., 2017). It has also been previously found that staff fear admitting their difficulties as they believe it may negatively impact their careers (Wallace et al., 2009). Accordingly, it is important to consider the magnitude of non-responders and the impact non-response bias may have on the results.

Moreover, the study encompassed participants who worked with individuals who have ID from a range of occupational backgrounds and settings to ensure generalisability of the results. However, the lack of diversity in our sample makes it difficult to generalise the results, as the study included an overwhelming majority of white female participants. The study also did not collect data regarding the sector staff currently worked in, preventing comparisons between those working in the NHS and those working in the private sector. To have recruited a more diverse sample PPI from Black Asian and Minority Ethnic staff focusing on recruitment could have been carried out, prior to the study's distribution, to help make changes and adapt the recruitment strategy. Furthermore, visiting recruiting sites in person to explain the project aims and why participation from diverse staff is crucial could have also improved recruitment (Farooqi et al., 2018).

Finally, the study took part during the coronavirus pandemic, which has been described as one of the world's most significant health crisis (Rothan & Byrareddy, 2020). Healthcare professionals may have been one of the most affected groups having to provide direct care despite the risks of exposure to the virus. Additionally, individuals who have ID have been particularly vulnerable to the negative consequence of the pandemic, potentially leading to greater care demands. Consequently, this may have placed increased strain on staff working with individuals who have ID and therefore influenced their CF.

Clinical Implications

The present study found an association between attachment orientations, coping self-efficacy and CF in staff working with individuals who have ID and behaviours that challenge. This holds several repercussions, both for staff well-being, and for the quality-of-care they provide.

Coping self-efficacy was shown to mediate the relationship between anxious and avoidant attachment and burnout, and between anxious attachment and compassion satisfaction. Therefore, it may be beneficial to target staff's coping self-efficacy, by providing them with adaptive problem focused coping skills. Cognitive behavioural interventions, such as coping effectiveness training (Chesney et al., 2003), could increase adaptive coping and as a result reduce the likelihood of staff developing CF. Alternatively, staff training with a focus on developing problem-focused strategies for managing behaviours that challenge may be beneficial in increasing staff's coping self-efficacy within their workplace.

Furthermore, this study highlights the importance of employers and supervisors having an awareness of the relational style of healthcare staff, particularly when they are working with vulnerable individuals and in stressful environments. Staff should be encouraged to consider how their attachment orientation may be impacting their wellbeing and their ability to cope in the workplace. This could be achieved through frequent supervision or workplace peer support groups. Additionally, as attachment anxiety was a significant predictor of secondary traumatic stress, supervisors should monitor staff's requests for support, understand why it is requested, as well as be alert to the symptoms of secondary traumatic stress.

Moreover, at an organisational level, services should aim to promote a collegial environment and a collaborative approach at work. Previous studies have found co-worker support to have a positive effect on workplace coping (Long, 1990), as it can help individuals access aid and advice and, re-appraise stressful situations so that they appear less threatening (Heaney et al., 1995). Additionally, co-worker relationships could potentially be enhanced by introducing efforts and programmes, such as team building exercises and away days. At an individual level, staff could be

supported in thinking about how they relate to their colleagues and to individuals who have ID. Allowing staff to reflect on their experiences could have a positive impact on their coping self-efficacy (Lapina, 2018) and as a result, reduce levels of CF as well as lead to better quality relationship between staff and individuals who have ID.

Future Research

Despite our promising results, questions remain. The current study employed a cross-sectional study design which makes it difficult to draw causal conclusions. Future research should consider utilising a longitudinal design to replicate and explore our findings over an extended period of time. This will strengthen our understanding of causal connections and increase the likelihood of making reliable conclusions. Additionally, further research should expand the model to include additional mediator variables.

Alternatively, future research using a qualitative approach to understanding CF in staff who work with individuals who have ID and behaviours that challenge may be beneficial. This could help gain a greater understanding of their experiences and could help explore which factors staff feel might protect them from the negative consequence of CF.

Moreover, the current study did not measure the intensity and frequency of the behaviours that challenge. Future studies should consider including an additional measure, such as the Behaviour Problem Inventory (Rojahn et al., 2001), to allow for better comparisons between types, frequency, and intensity of the behaviours that challenge.

Finally, if additional evidence is found to support the current findings, future research could consider the development of an intervention focusing on increasing individuals' coping self-efficacy. Accordingly, the use of a randomised control trial could be used to determine the effectiveness of coping skills training which focuses on adaptive coping strategies for individuals with anxious and avoidant attachment orientations.

Conclusions

This is the first study to examine association between attachment orientation and CF in staff working with individuals who have ID and behaviours that challenge. Additionally, it was the first study to explore the mediating role of coping-self-efficacy on the relationship between attachment orientation and CF. The current study indicated correlations between all study variables as expected. However, further analyses showed that coping self-efficacy only mediated the relationship between attachment orientation and burnout, as well as the relationship between anxious attachment and compassion satisfaction. Furthermore, coping self-efficacy was found to moderate the relationship between avoidant attachment and compassions satisfaction, though results relating to avoidant attachment should be approached with some caution due to the moderate alpha level found in this study.

References

Al Barmawi, M. A., Subih, M., Salameh, O., Sayyah Yousef Sayyah, N., Shoqirat, N., & Abdel-Azeez Eid Abu Jebbeh, R. (2019). Coping strategies as moderating factors to compassion fatigue among critical care nurses. *Brain and Behavior*, *9*(4), e01264, 1-8. https://doi.org/10.1002/brb3.1264

Arimon-Pagès, E., Torres-Puig-Gros, J., Fernández-Ortega, P., & Canela-Soler, J. (2019). Emotional impact and compassion fatigue in oncology nurses: Results of a multicentre study. *European Journal of Oncology Nursing, 43*, 101666, 1-6. https://doi.org/10.1016/j.ejon.2019.09.007

Benoit, M., Bouthillier, D., Moss, E., Rousseau, C., & Brunet, A. (2010). Emotion regulation strategies as mediators of the association between level of attachment security and PTSD symptoms following trauma in adulthood. *Anxiety, Stress, and Coping*, *23*(1), 101–118. 10.1080/10615800802638279

Berry, K., & Kingswell, S. (2012). An investigation of adult attachment and coping with exam-related stress. *British Journal of Guidance and Counselling*, *40*(4), 315-325. https://doi.org/10.1080/03069885.2012.685861

Berry, K., Shah, R., Cook, A., Geater, E., Barrowclough, C., & Wearden, A. (2008). Staff attachment styles: a pilot study investigating the influence of adult attachment styles on staff psychological mindedness and therapeutic relationships. *Journal of Clinical Psychology*, *64*(3), 355–363. 10.1002/jclp.20456

Besser, A., & Neria, Y. (2012). When home isn't a safe haven: Insecure attachment orientations, perceived social support, and PTSD symptoms among Israeli evacuees under missile threat. *Psychological Trauma: Theory, Research, Practice, and Policy, 4*(1), 34–46. https://doi.org/10.1037/a0017835

Birnbaum, G. E., Orr, I., Mikulincer, M., & Florian, V. (1997). When marriage breaks up-does attachment style contribute to coping and mental health? *Journal of Social and Personal Relationships, 14*(5), 643–654. *https://doi.org/10.1177/0265407597145004*

Bowlby, J. (1973). *Attachment and loss: Vol. 2. Separation: Anxiety and anger*. New York: Basic Books.

Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment: An integrative overview. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 46–76). Guilford.

Bride, B.E., Radey, M., & Figley, C.R. (2007). Measuring compassion fatigue. *Clinical Social Work, 35*(3), 155–163. 10.1007/s10615-007-0091-7

British Psychological Society. (2021). *BPS code of human research ethics*. BPS https://www.bps.org.uk/sites/www.bps.org.uk/files/Policy/Policy%20-%20Files/BPS%20Code%20of%20Human%20Research%20Ethics.pdf

Bucci, S., Seymour-Hyde, A., Harris, A., & Berry, K. (2016). Client and Therapist Attachment Styles and Working Alliance. *Clinical psychology & psychotherapy*, *23*(2), 155–165. 10.1002/cpp.1944

Cavanagh, N., Cockett, G., Heinrich, C., Doig, L., Fiest, K., Guichon, J.R., Page, S., Mitchell, I., & Doig, C.J. (2020). Compassion fatigue in healthcare providers: A systematic review and meta-analysis. *Nursing Ethics, 27*(3), 639-665. https://doi.org/10.1177/0969733019889400

Chesney, M. A., Chambers, D. B., Taylor, J. M., Johnson, L. M., & Folkman, S. (2003). Coping effectiveness training for men living with HIV: Results from a randomized clinical trial testing a group-based intervention. *Psychosomatic Medicine*, *65*(6), 1038–1046. 10.1097/01.psy.0000097344.78697.ed

Chesney, M. A., Neilands, T. B., Chambers, D. B., Taylor, J. M., & Folkman, S. (2006). A validity and reliability study of the coping self-efficacy scale. *British Journal of Health Psychology, 11*(3), 421– 437. https://doi.org/10.1348/135910705X53155

Cohen, J. (2013). *Statistical Power Analysis for the Behavioral Sciences*. Routledge. https://doi.org/10.4324/9780203771587

Dasan, S., Gohil, P., Cornelius, V., & Taylor, C. (2015). Prevalence, causes and consequences of compassion satisfaction and compassion fatigue in emergency care: A mixed-methods study of UK NHS Consultants. *Emergency Medicine Journal*, *32*(8), 588–594. 10.1136/emermed-2014-203671

Donaldson, S. I., & Grant-Vallone, E. J. (2002). Understanding self-report bias in organizational behavior research. *Journal of Business and Psychology, 17*(2), 245-260. https://doi.org/10.1023/A:1019637632584

Emerson, E. (2001). *Challenging behaviour: Analysis and intervention in people with severe intellectual disabilities*. Cambridge University Press.

Farooqi, A., Jutlla, K., Raghavan, R., Wilson, A., Uddin, M.S., Akroys, C., Patel, N., Campnell-Morris, P.P., Farrooqi, A.T (2002) Developing a toolkit for increasing the participation of black, Asian and minority ethnic communities in health and social care research. *BMC Medical Research Methodology*, 22 **(**17), 1-16. 10.1186/s12874-021-01489-2

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.G. (2009)*.* Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods, 41***,** 1149–1160. 10.3758/BRM.41.4.1149

Field, A. (2013). *Discovering Statistics Using IBM SPSS Statistics: And sex and drugs and rock 'n' roll, 4th edition.* Sage.

Figley, C. R. (1995). Compassion fatigue as secondary traumatic stress disorder: An overview. In C. R. Figley (Ed.), *Compassion fatigue: Coping with secondary traumatic disorder in those who treat the traumatized* (pp. 1–20). Brunner-Mazel.

Figley, C. R. (2002). Compassion fatigue: Psychotherapists' chronic lack of self care. *Journal of Clinical Psychology: In Session: Psychotherapy in Practice*, *58*(11), 1433–1441. https://doi.org/10.1002/jclp.10090

Fukui, S., Rapp, C.A., Goscha, R., Marty, D., & Ezell, M. (2014). The Perceptions of Supervisory Support Scale. *Administration and Policy in Mental Health, 41(3)*, 353–359. 10.1007/s10488-013-0470-z

Harms, P. D. (2011). Adult attachment styles in the workplace. *Human Resource Management Review, 21*(4), 285-296.https://doi.org/10.1016/j.hrmr.2010.10.006

Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. *Communication Monographs*, *76*(4), 408-420. https://doi.org/10.1080/03637750903310360

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach.* Guilford Press.

Heaney, C. A., Price, R. H., & Rafferty, J. (1995). Increasing coping resources at work: A field experiment to increase social support, improve work team functioning, and enhance employee mental health. *Journal of Organizational Behavior, 16*(4), 335–353. https://doi.org/10.1002/job.4030160405

Herman, J. L., & Tetrick, L. E. (2009). Problem-focused versus emotion-focused coping strategies and repatriation adjustment. *Human Resource Management*, *48*(1), 69-88. https://doi.org/10.1002/hrm.20267

Jacobson, J. M. (2012). Risk of compassion fatigue and burnout and potential for compassion satisfaction among employee assistance professionals: Protecting the workforce. Traumatology, *18*(3), 64-72. https://doi.org/10.1177/1534765611431833

Jenkins, R., Rose, J., & Lovell, C. (1997). Psychological well-being of staff working with people who have challenging behaviour. *Journal of Intellectual Disability Research*, *41*(6), 502–511. https://doi.org/10.1111/j.1365-2788.1997.tb00743.x

Kim, Y. H., Kim, S. R., Kim, Y. O., Kim, J. Y., Kim, H. K., & Kim, H. Y. (2017). Influence of type D personality on job stress and job satisfaction in clinical nurses: the mediating effects of

compassion fatigue, burnout, and compassion satisfaction. *Journal of advanced nursing*, *73*(4), 905-916. https://doi.org/10.1111/jan.13177

Kapsokavadi, M.M., & Beail, N. (2022). *A meta-analysis of staff burnout and behaviours that challenge in services for people who have intellectual disability*. Unpublished manuscript.

Knaak, S., Mantler, E., & Szeto, A. (2017). Mental illness-related stigma in healthcare: Barriers to access and care and evidence-based solutions. *Healthcare Management Forum*, *30*(2), 111–116. 10.1177/0840470416679413

Lapina, A. (2018). Facilitating coping through reflective learning in adult education: A review of the reciprocal relationship between coping and learning. *Adult Learning*, *29*(4), 131–140. https://doi.org/10.1177/1045159518776126

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer publishing company.

Lloyd, B. P., & Kennedy, C. H. (2014). Assessment and treatment of challenging behaviour for individuals with intellectual disability: A research review. *Journal of Applied Research in Intellectual Disabilities*, *27*(3), 187-199. https://doi.org/10.1111/jar.12089

Long, B. C. (1990). Relation between coping strategies, sex-typed traits, and environmental characteristics: A comparison of male and female managers. *Journal of Counseling Psychology, 37*(2), 185–194. https://doi.org/10.1037/0022-0167.37.2.185

Luiselli, J. K. (2012). *The handbook of high-risk challenging behaviors in people with intellectual and developmental disabilities*. Brookes Publishing Company.

Lundström, M., Aström, S., & Graneheim, U. H. (2007). Caregivers' experiences of exposure to violence in services for people with learning disabilities. *Journal of Psychiatric and Mental Health Nursing*, *14*(4), 338–345. https://doi.org/10.1111/j.1365-2850.2007.01081.x

Matson, J. L., & Shoemaker, M. (2009). Intellectual disability and its relationship to autism spectrum disorders. *Research in Developmental Disabilities*, *30*(6), 1107–1114. https://doi.org/10.1016/j.ridd.2009.06.003

Maulik, P. K., Mascarenhas, M. N., Mathers, C. D., Dua, T., & Saxena, S. (2011). Prevalence of intellectual disability: A meta-analysis of population-based studies. *Research in Developmental Disabilities*, *32*(2), 419–436. https://doi.org/10.1016/j.ridd.2010.12.018

Mikulincer, M., & Florian, V. (1995). Appraisal of and coping with a real-life stressful situation: The contribution of attachment styles. *Personality and Social Psychology Bulletin, 21*(4), 406–414. https://doi.org/10.1177/0146167295214011

Mikulincer, M., Gillath, O., Halevy, V., Avihou, N., Avidan, S., & Eshkoli, N. (2001). Attachment theory and reactions to others' needs: Evidence that activiation of the sense of attachment security promotes empathic responses. *Journal of Personality and Social Psychology, 81*(6), 1205–1224. https://doi.org/10.1037/0022-3514.81.6.1205

Mikulincer, M., Shaver, P. R., Gillath, O., & Nitzberg, R. A. (2005). Attachment, caregiving, and altruism: Boosting attachment security increases compassion and helping. *Journal of Personality and Social Psychology, 89*(5), 817–839. https://doi.org/10.1037/0022-3514.89.5.817

Mikulincer, M., & Shaver, P. R. (2005). Attachment security, compassion, and altruism. *Current Directions in Psychological Science, 14*(1), 34–38. https://doi.org/10.1111/j.0963-7214.2005.00330.x

Mikulincer, M., Shaver, P. R., & Pereg, D. (2003). Attachment theory and affect regulation: The dynamics, development, and cognitive consequences of attachment-related strategies. *Motivation and Emotion, 27*(2), 77–102. https://doi.org/10.1023/A:1024515519160

Montgomery, A., Panagopoulou, E., Kehoe, I., & Valkanos, E. (2011). Connecting organisational culture and quality of care in the hospital: Is job burnout the missing link? *Journal of Health Organization and Management, 25*(1), 108–23. 10.1108/14777261111116851

Morison, M., & Benight, C. C. (2022). Trauma coping self-efficacy mediates associations between adult attachment and posttraumatic stress symptoms. *Frontiers in Psychology*, *13* (799608), 1-13. 10.3389/fpsyg.2022.799608

Myers, L. B., & Brewin, C. R. (1994). Recall of early experience and the repressive coping style. *Journal of Abnormal Psychology, 103*(2), 288–292. https://doi.org/10.1037/0021-843X.103.2.288

Ognibene, T. C., & Collins, N. L. (1998). Adult attachment styles, perceived social support and coping strategies. *Journal of Social and Personal Relationships*, *15*(3), 323-345. https://doi.org/10.1177/0265407598153002

Pardess, E., Mikulincer, M., Dekel, R., & Shaver, P. R. (2014). Dispositional attachment orientations, contextual variations in attachment security, and compassion fatigue among volunteers working with traumatized individuals. *Journal of Personality*, *82*(5), 355–366. 10.1111/jopy.12060

Pearlman, L. A., & Mac Ian, P. S. (1995). Vicarious traumatization: An empirical study of the effects of trauma work on trauma therapists. *Professional Psychology: Research and Practice, 26*(6), 558–565. https://doi.org/10.1037/0735-7028.26.6.558

Pérez-García, E., Ortega-Galán, Á. M., Ibáñez-Masero, O., Ramos-Pichardo, J. D., Fernández-Leyva, A., & Ruiz-Fernández, M. D. (2021). Qualitative study on the causes and consequences of compassion fatigue from the perspective of nurses. *International Journal of Mental Health Nursing*, *30*(2), 469-478. https://doi.org/10.1111/inm.12807

Peters, E. (2018). Compassion fatigue in nursing: A concept analysis. *Nursing forum*, 53(4), 466-480. https://doi.org/10.1111/nuf.12274

Pietromonaco, P. R., Barrett, L. F., & Powers, S. I. (2006). *Adult attachment theory and affective reactivity and regulation.* In D. K. Snyder, J. Simpson, & J. N. Hughes (Eds.), *Emotion regulation in couples and families: Pathways to dysfunction and health* (pp. 57–74). American Psychological Association. https://doi.org/10.1037/11468-003

Pisanti, R., Lombardo, C., Lucidi, F., Lazzari, D., & Bertini, M. (2008). Development and validation of a brief occupational coping self-efficacy questionnaire for nurses. *Journal of Advanced Nursing*, *62*(2), 238–247. https://doi.org/10.1111/j.1365-2648.2007.04582.x

Poppes, P., van der Putten, A. J. J., & Vlaskamp, C. (2010). Frequency and severity of challenging

    behavior in people with profound intellectual and multiple disabilities. *Research in*

    Developmental Disabilities, 31(6), 1269–1275. https://doi.org/10.1016/j.ridd.2010.07.017

Racanelli, C. (2005). Attachment and compassion fatigue among American and Israeli mental

    health clinicians working with traumatized victims of terrorism. *International Journal of*

    Emergency Mental Health, 7(2), 115–124.

Radley, M., Figley, C.R. (2007). The social psychology of compassion. *Clinical Social Work*

    Journal, 35(3), 207–214. https://doi.org/10.1007/s10615-007-0087-3

Ratrout, H.F., & Hamdan-Mansou, A.M. (2020). Secondary traumatic stress among emergency

    nurses: Prevalence, predictors, and consequences. *International journal of nursing*

    practice, *26*(e12767), 1-9 10.1111/ijn.12767

Rauvola, R.S., Vega, D.M. & Lavigne, K.N. (2019). Compassion fatigue, secondary traumatic

    stress, and vicarious traumatization: A qualitative review and research agenda. *Occupational*

    Health Science, 3(3), 297–336. https://doi.org/10.1007/s41542-019-00045-1

Robson, C. (2002). *Real World research: A Resource for social scientists and practitioner-*

    researchers. Blackwell.

Rojahn, J., Matson, J. L., Lott, D., Esbensen, A. J., & Smalls, Y. (2001). The Behavior Problems

    Inventory: An instrument for the assessment of self-injury, stereotyped behavior, and

    aggression/destruction in individuals with developmental disabilities. *Journal of Autism and*

    Developmental Disorders, *31*(6), 577–588. 10.1023/a:1013299028321

Rothan, H. A., & Byrareddy, S. N. (2020). The epidemiology and pathogenesis of coronavirus

    disease (COVID-19) outbreak. *Journal of Dutoimmunity*, *109* (102433), 1-4.

    10.1016/j.jaut.2020.102433

Sabo, B. (2011). Reflecting on the concept of compassion fatigue. *Online Journal of Issues in*

    Nursing, *16*(1), 1. 10.3912/OJIN.Vol16No01Man01

Schwarzer, R., & Renner, B. (2000). Social-cognitive predictors of health behavior: Action self-efficacy and coping self-efficacy. *Health Psychology*, *19*(5), 487-495. https://doi.org/10.1037/0278-6133.19.5.487

Shaver, P. R., & Mikulincer, M. (2007). Adult Attachment Strategies and the Regulation of Emotion. In J. J. Gross (Ed.), *Handbook of Emotion Regulation* (pp. 446–465). The Guilford Press.

Singh, J., Karanika-Murray, M., Baguley, T., & Hudson, J. (2020). A systematic review of job demands and resources associated with compassion fatigue in mental health professionals. *International Journal of Environmental Research and Public Health*, *17*(6987), 1-28. 10.3390/ijerph17196987

Sinclair, S., Norris, J.M., McConnell, S.J., Chochinov, H. M., Hack, T. F., Hagen, N. A., McClement, S., & Bouchal, S. R. (2016). Compassion: A scoping review of the healthcare literature. *BMC Palliative Care,* 15(6), 1-16. 10.1186/s12904-016-0080-0

Stamm, B. H. (2005). *The ProQOL manual: The professional quality of life scale: Compassion satisfaction, burnout & compassion fatigue/secondary trauma scales*. MD: Sidran Press.

Stamm, B. H. (2010). *The concise ProQOL manual*. ProQOL https://proqol.org/

Thimm J. C. (2010). Mediation of early maladaptive schemas between perceptions of parental rearing style and personality disorder symptoms. *Journal of Behavior Therapy and Experimental Psychiatry*, *41*(1), 52–59. 10.1016/j.jbtep.2009.10.001

Tziner, A., Ben-David, A., Oren, L., & Sharoni, G. (2014). Attachment to work, job satisfaction and work centrality. *Leadership & Organization Development Journal*, *35*(6), 555-565. https://doi.org/10.1108/LODJ-08-2012-0102

Vetere, A., & Myers, L. B. (2002). Repressive coping style and adult romantic attachment style: Is there a relationship? *Personality and Individual Differences, 32*(5), 799–807. https://doi.org/10.1016/S0191-8869(01)00083-6

Wagaman, A.M., Geiger, J.M., Shockley, C., & Segal, E.A. (2015). The role of empathy in burnout, compassion satisfaction, and secondary traumatic stress among social workers. *Social Work, 60*(3), 201-209. https://doi.org/10.1093/sw/swv014

Wallace, J. E., Lemaire, J. B., & Ghali, W. A. (2009). Physician wellness: a missing quality indicator. *Lancet*, *374*(9702), 1714–1721. 10.1016/S0140-6736(09)61424-0

Wang, J., Okoli, C. T., He, H., Feng, F., Li, J., Zhuang, L., & Lin, M. (2020). Factors associated with compassion satisfaction, burnout, and secondary traumatic stress among Chinese nurses in tertiary hospitals: A cross-sectional study. *International Journal of Nursing Studies*, *102*, 103472. https://doi.org/10.1016/j.ijnurstu.2019.103472

Wei, M., Russell, D.W., Mallinckrodt, B., & Vogel, D.L. (2007) The experiences in close relationship scale (ecr)-short form: Reliability, validity, and factor structure. *Journal of Personality Assessment*, *88*(2), 187-204. https://doi.org/10.1080/00223890701268041

Weigl, M., Schneider, A., Hoffmann, F., & Angerer, P. (2015). Work stress, burnout, and perceived quality of care: a cross-sectional study among hospital pediatricians. *European Journal of Pediatrics, 174*(9), 1237–46. 10.1007/s00431-015-2529-1

Wells-English, D., Giese, J., & Price, J. (2019). Compassion fatigue and satisfaction: Influence on turnover among oncology nurses at an urban cancer center. *Clinical Journal of Oncology Nursing*, *23*(5), 487-493. *10.1188/19.CJON.487-493*

West, A. L. (2015). Associations among attachment style, burnout, and compassion fatigue in health and human service workers: A systematic review. *Journal of Human Behavior in the Social Environment*, *25*(6), 571-590. https://doi.org/10.1080/10911359.2014.988321

Zerach, G. (2013). Compassion fatigue and compassion satisfaction among residential child care workers: The role of personality resources. *Residential Treatment for Children & Youth, 30*(1), 72–91. https://doi.org/10.1080/0886571X.2012.761515

Zhao, X., Lynch Jr, J. G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths

about mediation analysis. *Journal of Consumer Research, 37*(2), 197-206.

https://doi.org/10.1086/651257

Appendix A

Ethical Approval

Marcella Kapsokavadi
Registration number: 190217954
Psychology
Programme: DClinPsy

Dear Marcella

PROJECT TITLE: Attachment Style, Coping Self-Efficacy & Compassion Fatigue: A Study on Staff Exposed to People Who Have Intellectual Disabilities and Who Engage in Behaviours that Challenge.
APPLICATION: Reference Number 037053

On behalf of the University ethics reviewers who reviewed your project, I am pleased to inform you that on 18/01/2021 the above-named project was **approved** on ethics grounds, on the basis that you will adhere to the following documentation that you submitted for ethics review:

- University research ethics application form 037053 (form submission date: 11/12/2020); (expected project end date: 31/05/2022).
- Participant information sheet 1085349 version 1 (11/12/2020).
- Participant information sheet 1085351 version 1 (11/12/2020).
- Participant consent form 1085352 version 1 (11/12/2020).

If during the course of the project you need to deviate significantly from the above-approved documentation please inform me since written approval will be required.

Your responsibilities in delivering this research project are set out at the end of this letter.

Yours sincerely

Department Of Psychology Research Ethics Committee
Ethics Administrator
Psychology

Please note the following responsibilities of the researcher in delivering the research project:

- The project must abide by the University's Research Ethics Policy:
  https://www.sheffield.ac.uk/rs/ethicsandintegrity/ethicspolicy/approval-procedure
- The project must abide by the University's Good Research & Innovation Practices Policy:
  https://www.sheffield.ac.uk/polopoly_fs/1.671066!/file/GRIPPolicy.pdf
- The researcher must inform their supervisor (in the case of a student) or Ethics Administrator (in the case of a member of staff) of any significant changes to the project or the approved documentation.
- The researcher must comply with the requirements of the law and relevant guidelines relating to security and confidentiality of personal data.
- The researcher is responsible for effectively managing the data collected both during and after the end of the project in line with best practice, and any relevant legislative, regulatory or contractual requirements.

Appendix B

NHS Health Research Authority Approval

Miss Marcella Kapsokavadi
Apartment 2 Edmund House
1 Edmund Court
Sheffield
S2 4DE

Email: approvals@hra.nhs.uk

12 March 2021

Dear Miss Kapsokavadi

**HRA and Health and Care
Research Wales (HCRW)
Approval Letter**

Study title:	**Attachment Style, Coping Self-Efficacy & Compassion Fatigue: A Study on Staff Exposed to People Who Have Intellectual Disabilities and Who Engage in Behaviours that Challenge.**
IRAS project ID:	**295919**
Protocol number:	**170111**
REC reference:	**21/HRA/0858**
Sponsor	**University of Sheffield**

I am pleased to confirm that **HRA and Health and Care Research Wales (HCRW) Approval** has been given for the above referenced study, on the basis described in the application form, protocol, supporting documentation and any clarifications received. You should not expect to receive anything further relating to this application.

Please now work with participating NHS organisations to confirm capacity and capability, in line with the instructions provided in the "Information to support study set up" section towards the end of this letter.

How should I work with participating NHS/HSC organisations in Northern Ireland and Scotland?
HRA and HCRW Approval does not apply to NHS/HSC organisations within Northern Ireland and Scotland.

If you indicated in your IRAS form that you do have participating organisations in either of these devolved administrations, the final document set and the study wide governance report (including this letter) have been sent to the coordinating centre of each participating nation. The relevant national coordinating function/s will contact you as appropriate.

Appendix C

Scientific Approval

The University Of Sheffield.

Department Of Psychology.
Clinical Psychology Unit.

Doctor of Clinical Psychology (DClin Psy) Programme
Clinical supervision training and NHS research training & consultancy.

Clinical Psychology Unit
Department of Psychology
University of Sheffield
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1 Vicar Lane
Sheffield
S1 2LT

Dr A R Thompson, Clinical Training Research Director
Please address any correspondence to Amrit Sinha Research
Support Officer
Telephone: 0114 2226650
Email: a.sinha@sheffield.ac.uk

23rd November 2020

To: Research Governance Office

Dear Sir/Madam,

RE: Confirmation of Scientific Approval and indemnity of enclosed Research Project

Project title: Attachment Style, Coping Self-Efficacy & Compassion Fatigue: A Study on Staff Exposed to People Who Have Intellectual Disabilities and Who Engage in Behaviours that Challenge

Investigators: Marcella Kapsokavadi (DClin Psy Trainee, University of Sheffield); Prof Nigel Beail (Academic Supervisor University of Sheffield)

I write to confirm that the enclosed proposal forms part of the educational requirements for the Doctoral Clinical Psychology Qualification (DClin Psy) run by the Clinical Psychology Unit, University of Sheffield.

Three independent scientific reviewers usually drawn from academic staff within the Psychology Department have reviewed the proposal. Review includes appraisal of the proposed statistical analysis conducted by a statistical expert based in the School of Health and Related Research (ScHARR). Where appropriate an expert in qualitative methods is also appointed to review proposals.

I can confirm that approval of a proposal is dependent upon all necessary amendments having been made to the satisfaction of the reviewers and I can confirm that in this case the reviewers are content that the above study is of sound scientific quality. Consequently, the University will if necessary indemnify the study and act as sponsor.

Given the above, I would remind you that the Department already has an agreement with your office to exempt this proposal from further scientific review. However, if you require any further information, please do not hesitate to contact me.

Yours sincerely

Jaime Delgadillo
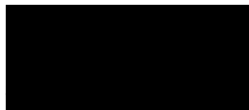
Dr Jaime Delgadillo

Director of Research Training, Clinical Psychology Unit

Cc Marcella Kapsokavadi; Nigel Beail

Appendix D

Demographic Questionnaire

Demographic Questionnaire

Directions: Please fill in the appropriate information for each question. The information collected on this questionnaire is for data analysis purposes only. Your responses will in no way be used to identify you as an individual.

1. Age: _____

2. To which gender identity do you most identify?

   o Female
   o Male
   o Transgender Female
   o Transgender Male
   o Gender Variant/ Non-Conforming
   o Not listed. Please specify

3. What is your ethnic group?

   o White/ White British
   o Black/African/Caribbean/Black British
   o Asian/ Asian British
   o Mixed/ Multiple ethnic groups
   o Other, please specify
   o Prefer not to say

4. Marital Status?

   o Married
   o In a relationship
   o Widowed
   o Divorced
   o Separated
   o In a domestic or civil partnership
   o Single

5. Your highest level of qualification?

   o No formal qualifications
   o GCSE (or equivalent)
   o A-level (or equivalence)
   o First degree
   o Post-graduate qualification
   o Other, please specify

6. Your Occupation?

   - Speech and Language Therapist
   - Medical Doctor
   - Psychologist
   - Assistant Psychologist
   - Therapy Assistant
   - Support Worker
   - Nurse
   - Occupational Therapist
   - Other, please specify

7. How long have you worked in your current position? _____years/months

8. How long have you worked with individuals who have an intellectual disability? _____years/months

9. What is the approximate number of hours you work per week? _____hours per week

10. How much time do you approximately spend, with individuals who have an intellectual disability and who display behaviours that challenge per week? _____hours per week

11. What level of intellectual disability do the people you typically work with have?

    - Mild/ Moderate (IQ=41-70)
    - Severe/ Profound (IQ< 26-40)
    - All levels

12. What types of behaviours that challenge, are you currently working with?

    - Self-injurious behaviours
    - Aggressive/ Destructive behaviours
    - Stereotyped behaviours

13. How much do you agree or disagree with the following statement: "I receive the right amount of support and guidance from my supervisor".

    - Strongly disagree
    - Disagree
    - Agree

- o Strongly agree

14. How much do you agree or disagree with the following statement: "I am provided with all trainings necessary for me to perform my job".

- o Strongly disagree
- o Disagree
- o Agree
- o Strongly agree

Appendix E

Experiences in Close Relationships Scale – Short form (ECR-S; Brennan et al., 1998)

Removed for copyright purposes.

Appendix F

Coping Self-Efficacy Scale (CSES; Chesney et al., 2006)

Removed for copyright purposes.

Appendix G

Professional Quality of Life Scale (ProQOL; Stamm, 2010)

Removed for copyright purposes.

Appendix H

Public Involvement Responses

PPI member 1:
A question that has been raised in the PPI exercise is why we are not looking at compassion fatigue as staff feel this is a more significant factor.

PPI member 2:
"Looks good to me, very extensive and clear."

PPI member 3:
"This is good and explains things well. Yes it makes sense."

PPI member 4:
"I've had a read through the information sheet, I guess I'm just wondering why attachment style and coping self-efficacy are being looked as a possible reason for burnout rather than any environmental factors about the service they work in i.e. low staffing ratio, low team morale, inexperienced staff, lack of support, limited training, lack of or poor management of staff/service etc.

If the scale is only measuring the staff members own perception on their attachment style and coping self-efficacy, is this going to be reliable information? I don't think many people would admit that they can't cope or have an unhealthy attachment style. Also, depending on the person's personal life and whether they've just been on shift for three days straight or had a week off and come back, the answers to the questions could dramatically change."

PPI member 5:
"I was wondering if in the demographics section, there could be items for what types of behaviours that challenge people are working with i.e. self-injurious, physical aggression, stereotypical behaviours; as this may impact on people's responses. If the data was then separated on different behaviours, there might be a difference in the results?

Also, I think burnout in these situations can be mediated by supervision, leadership, workload, environmental factors – which might be something to think about in addition to attachment styles and coping self-efficacy; as the latter mediators focus solely on internal contributors to burnout.

A final point, and thinking with my LD head on, recent research and nice guidelines have started to change terminology from 'challenging behaviour' to 'behaviours that challenge' – which might be something to consider when writing up the project (extra work count though). Also, having an accessible summary in an easy read format so that people with LD aren't being excluded from research that is about them, even if they aren't the target sample."

PPI member 6:
"Looks great to me, interesting study! Although reading the burnout questions I'm slightly concerned I need a holiday!

The PIS is great. The analogue scale on the self-efficacy measure – the rating for 0 doesn't make sense but this may just be a typo. Should it be 'cannot do' or 'certain cannot do'."

Appendix I

Study Advertisement

DO YOU WORK WITH ADULTS WHO HAVE
INTELLECTUAL DISABILITIES?

e scan the QR code above (using your phone's

Appendix J

Study Information Sheet

Participant Information Sheet

I would like to take this opportunity to introduce myself to you. My name is Marcella Kapsokavadi and I am a trainee clinical psychologist. I am conducting a piece of research as part of the fulfilment of my doctorate in clinical psychology and would like to invite you to take part.

Before you decide whether to take part in the study, you need to know why the research is being done and what level of participation would be involved. Please take some time to read the following information carefully. If you wish to talk to others about the study, please do so. If there is anything in the following information that you are unsure of or would like to know more about, please do ask me. Please take your time to decide if you would like to participate or not.

What is the purpose of the study?
The purpose of this study is to investigate whether there is a relationship between attachment style, coping self-efficacy and compassion fatigue in staff exposed to people who have intellectual disabilities and who engage in behaviours that challenge. The study will also examine the mediating role of coping self-efficacy on attachment style and compassion fatigue.

Why are you inviting me to take part?
As you work closely with people who have intellectual disabilities and who display behaviours that challenge, I am interested to see whether this is causing you to experience compassion fatigue and if your attachment style and coping self-efficacy may also be linked to this.

Do I have to take part?
No, deciding to take part in this study is completely up to you. This information sheet describes the study and you should read it carefully before deciding to take part. You are free to refuse to take part or to withdraw at any time during the study, without giving any reason.

What will happen in the study?

If you decide to participate you will be asked to complete questions about your personality, your self-perceptions and your general well-being. The study will take approximately 10-15 minutes to complete, although individual completion times may vary. You are only asked to complete the questionnaires once and are free to complete them at a time that is suitable for you.

How will this study benefit me?

I cannot promise that you will receive any direct benefit from taking part in this study. However, I do hope that the information gained from this study will help improve the support given to staff who are exposed to individuals who have an intellectual disability and who engage in behaviours that challenge.

Additionally, for participating you will be given a chance to win a £25 Amazon voucher after you complete the survey. Please note that the information you provide for the draw is not linked to your survey responses and will be deleted after the draw takes place.

What if I have a complaint?

It is not anticipated that there will be any disadvantages to your taking part in this study. However, if you would like to make a complaint about this project, in the first instance you should contact the principal investigator, Marcella Kapsokavadi (mkapsokavadi1@sheffield.ac.uk). If you do not feel satisfied that your complaint has been dealt with appropriately you can contact the principal investigator's supervisor, Professor Nigel Beail (n.beail@sheffield.ac.uk). If you feel that your complaint has not been handled to your satisfaction following this, you can contact. Prof Elizabeth Milne, Head of Department at psy-hod@sheffield.ac.uk or Dr Robert Schmidt and Dr Jilly Gibson-Miller, chairs of the Department Ethics Subcommittee on psy-ethics@sheffield.ac.uk.

What if I want to withdraw from the study?

You can cease your participation at any time during the survey by closing your browser. However, you can only do this up to the time that you click the "submit the survey" button at the end of the survey or up to the time you return your forms, if

completing the study in paper format. This is because submitted responses are not identifiable for removal.

Will my data be kept confidential?

Your responses will be anonymous and remain confidential. The numerical data you provide will be aggregated with that of other respondents, to give the researcher an idea about general trends, rather than individuals.

Will the use of my data meet GDPR rules?

GDPR stands for the General Data Protection Regulation. In the UK we follow the GDPR rules and have a law called the Data Protection Act. All research using data must follow UK laws and rules. The University of Sheffield will act as the Data Controller for this study. This means that the University is responsible for looking after your information and using it properly. In order to collect and use your personal information as part of this research project, we must have a basis in law to do so. The basis that we are using is that the research is 'a task in the public interest'.

Further information, including details about how and why the University processes your personal information, how we keep your information secure, and your legal rights (including how to complain if you feel that your personal information has not been handled correctly), can be found in the University's Privacy Notice https://www.sheffield.ac.uk/govern/data-protection/privacy/general.

What will happen to the findings?

The results from this study will be submitted as an assessed piece of work for the clinical psychology doctorate at the University of Sheffield. Additionally, it is very likely that other researchers may find the data collected to be useful in answering future research questions. We will ask for your explicit consent for your data to be shared in this way. All participants will be given a summary of the research findings, if they wish. If you would like a summary, please email me at the address below.

Who is organising this research study?

This research is being conducted by *Marcella Kapsokavadi, Trainee Clinical Psychologist,* under the supervision of Professor Nigel Beail, from the Department of Psychology at the University of Sheffield.

If you have any questions regarding this study, its purpose or procedures, please feel free to contact Marcella Kapsokavadi (mkapsokavadi1@sheffield.ac.uk). Alternatively, you can email a.sinha@sheffield.ac.uk or leave a telephone message with Amrit Sinha, Research Support Officer on: 0114222 6650 and he will ask the trainee to contact you. The University of Sheffield will act as the Data Controller for this study. This means that the University is responsible for looking after your information and using it properly.

I hope this helps. Please contact me if you have any further questions.

Appendix K

Consent Form

Consent

I agree to participate in this research study, and I have made this decision based on the information I have received about it.

Please select the "I agree" option below to indicate that you:

1. I understand the nature of the study
2. I understand that taking part is entirely my choice
3. I understand that I can cease my participation at any time during the survey, but only up until the time that I click the "submit the survey" button at the end of the survey as submitted surveys are not identifiable for removal
4. I understand that the data of this study may be used in other research projects
5. I fully consent to participate

Do you wish to continue? To acknowledge that you have read and understood this information and would like to continue with the research study, please click on "I agree".

        I agree   **No, thank you**

Appendix L

Debrief Form

Participant Debrief Form

Attachment Style, Coping Self-Efficacy & Compassion Fatigue: A Study on Staff Exposed to People Who Have Intellectual Disabilities and Who Engage in Behaviours that Challenge.

I would like to thank you for participating in this research. Your time and thoughtful responses are greatly appreciated!

The aim of this research was to examine the relationship between adult attachment styles and compassion fatigue in staff working with individuals who have an intellectual disability, and who display behaviours that challenge, and to investigate if coping self-efficacy mediates that relationship. To assess this, you completed standardised questionnaires.

Results of this study will not include your name or any other identifiable information. The research did not use deception. You may request a summary of the research findings of this project (once it is completed). To do so, please contact the email address below.

If you are feeling distressed as a result of your participation, please contact your GP or your local counselling services. Alternatively, please call Samaritans on 116 123 (free from any phone), **SANEline** on 0300 304 7000 (4.30pm–10.30pm every day) or MIND on 0300 123 3393 (9am to 6pm, Monday to Friday).

Sincerely,

Marcella Kapsokavadi (mkapsokavadi1@sheffield.ac.uk)

Professor Nigel Beail (n.beail@sheffield.ac.uk)

Histogram and Q-Q plot for Burnout

Histogram

Mean = 25.35
Std. Dev. = 5.852
N = 104

Normal Q–Q Plot of BO
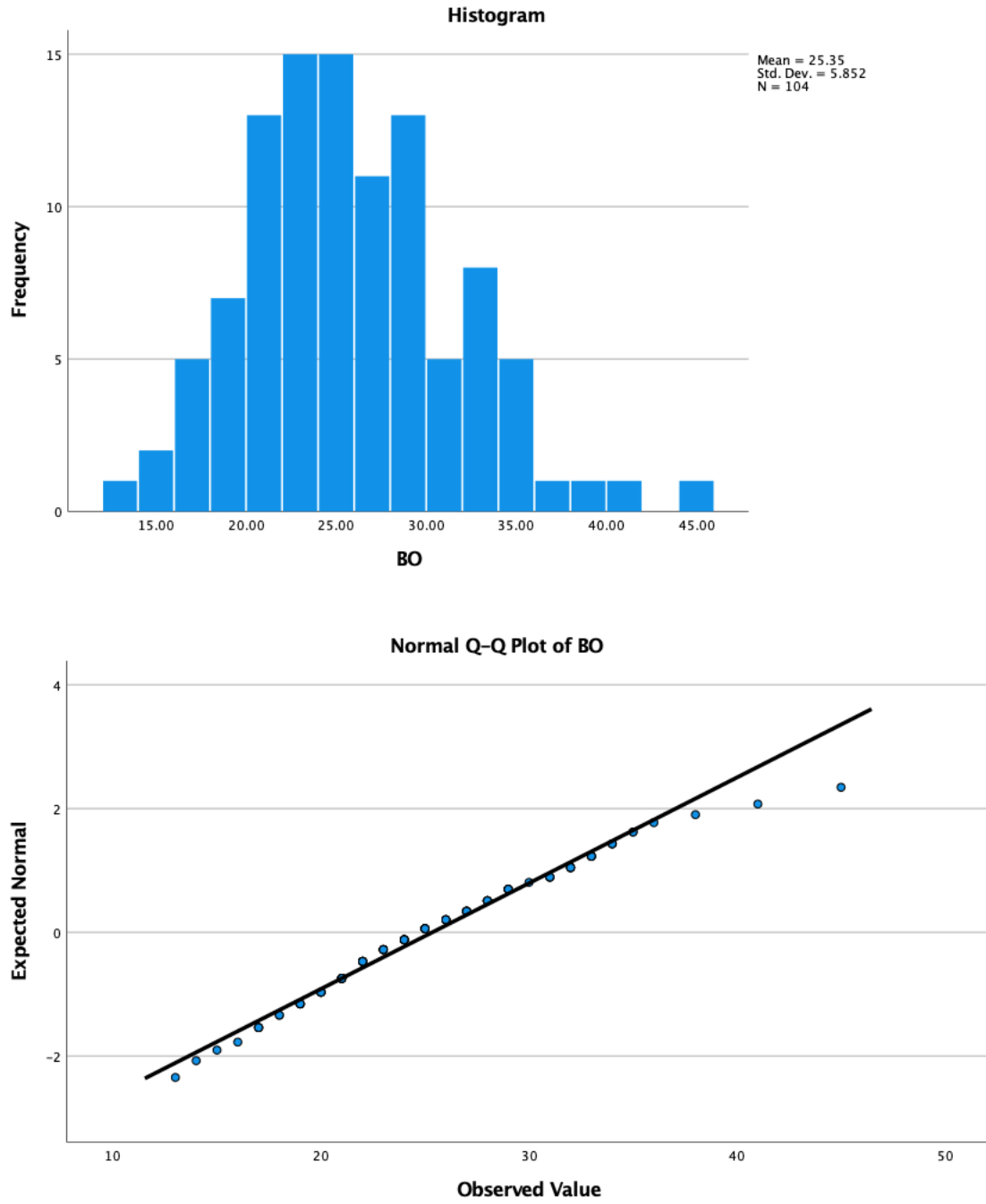
Appendix N

Histogram and Q-Q plot for Secondary Traumatic Stress

Histogram
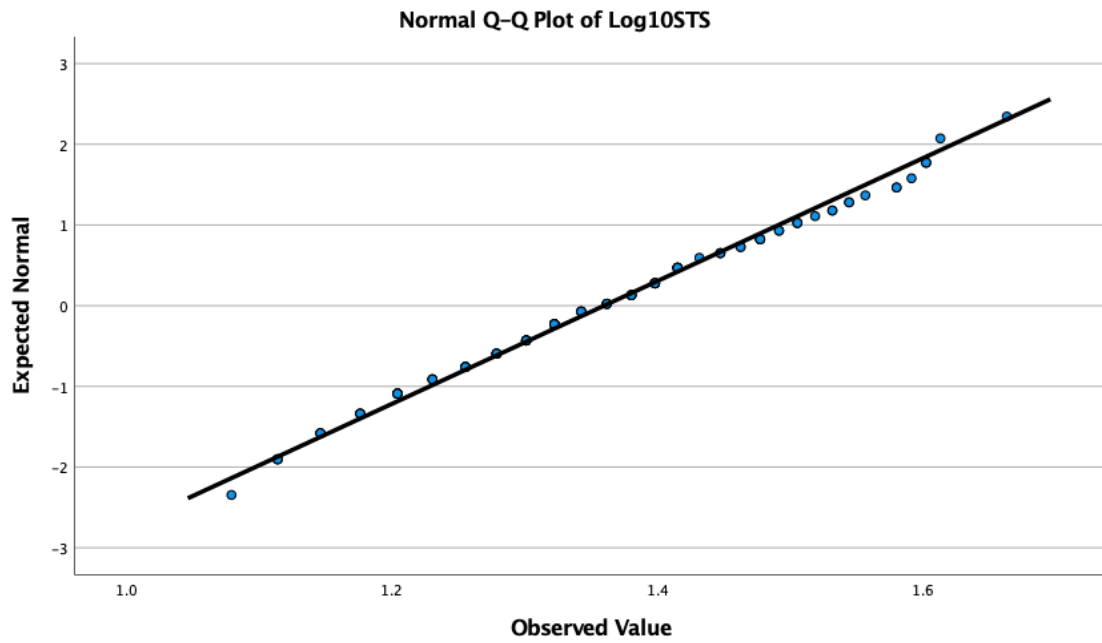
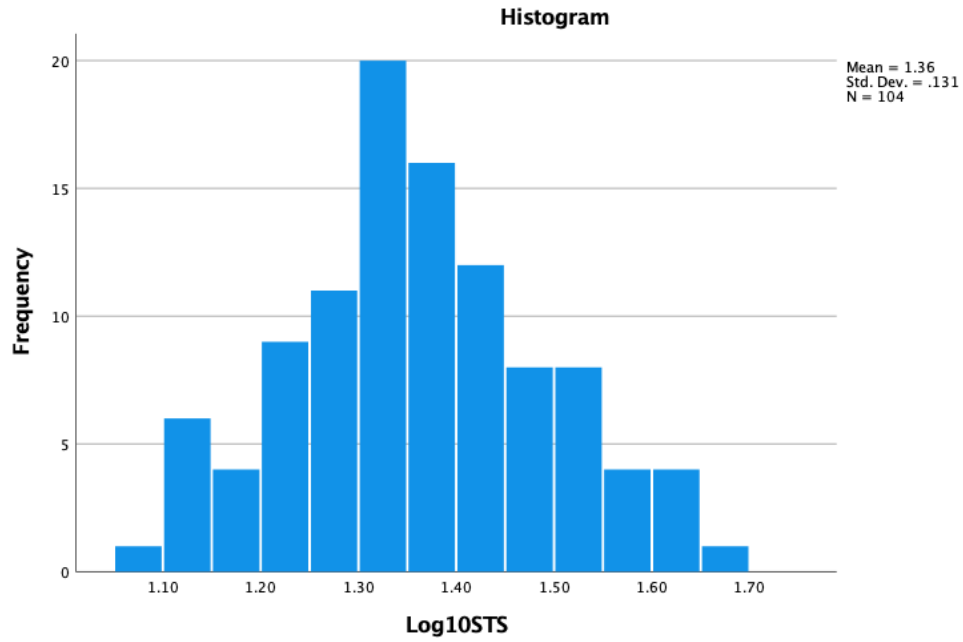Mean = 23.95
Std. Dev. = 7.387
N = 104

Normal Q–Q Plot of STS
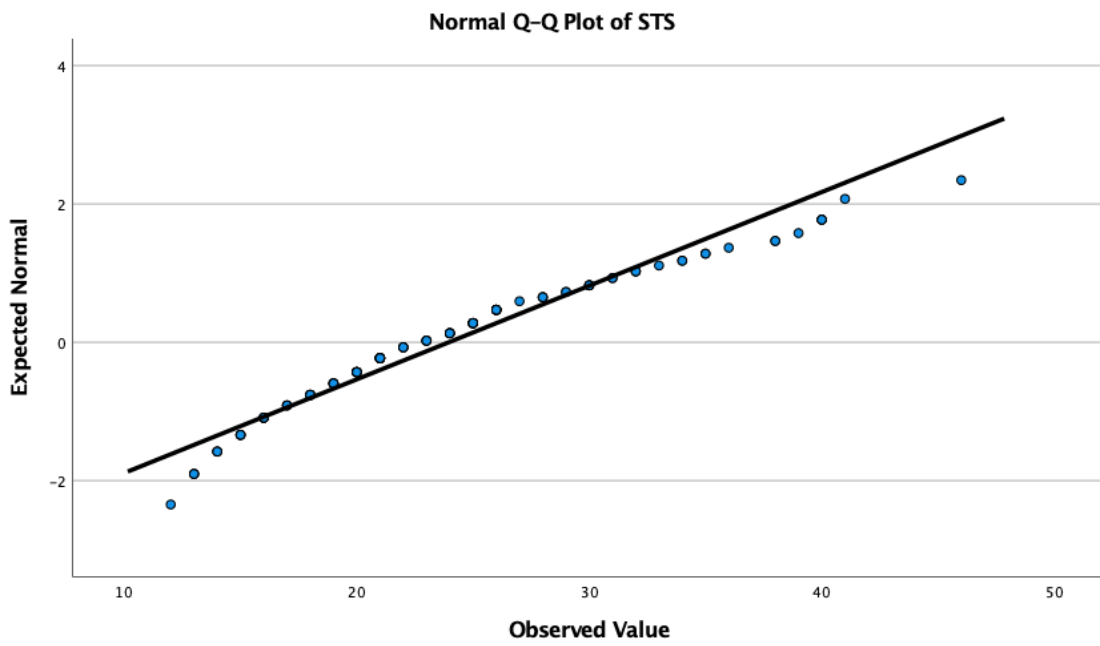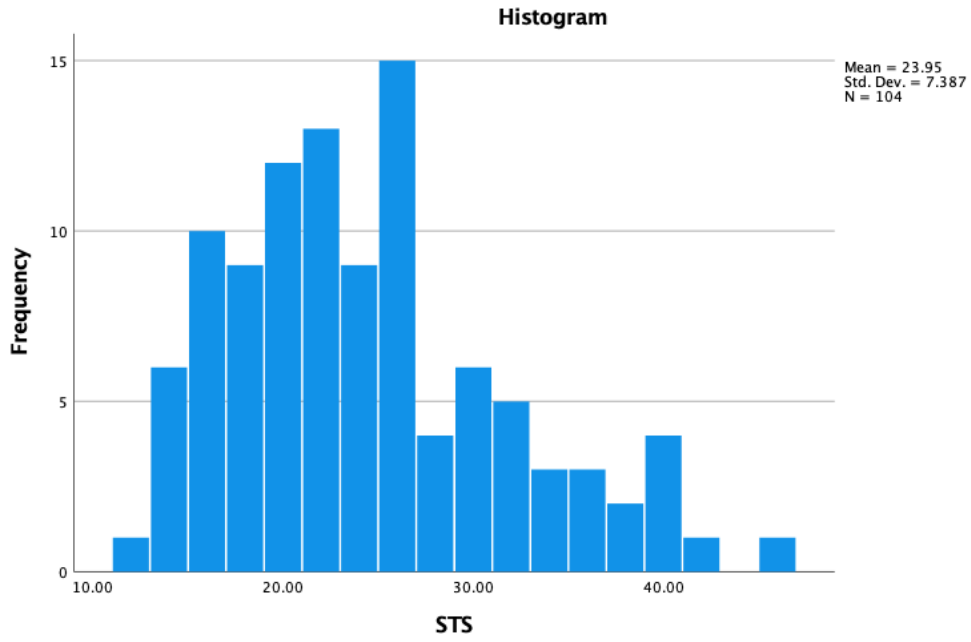
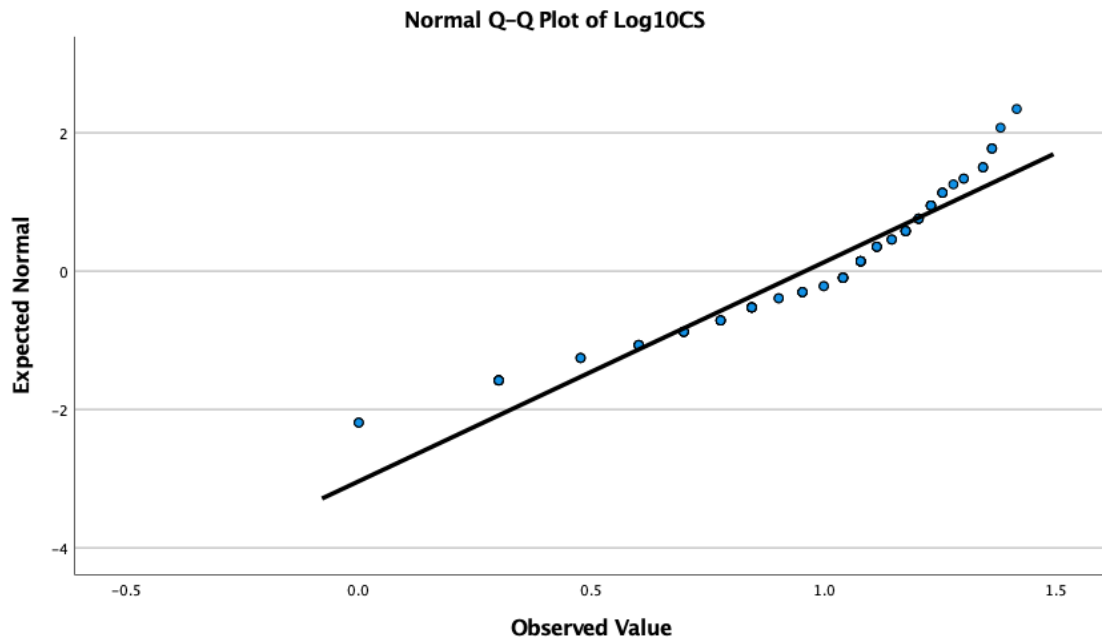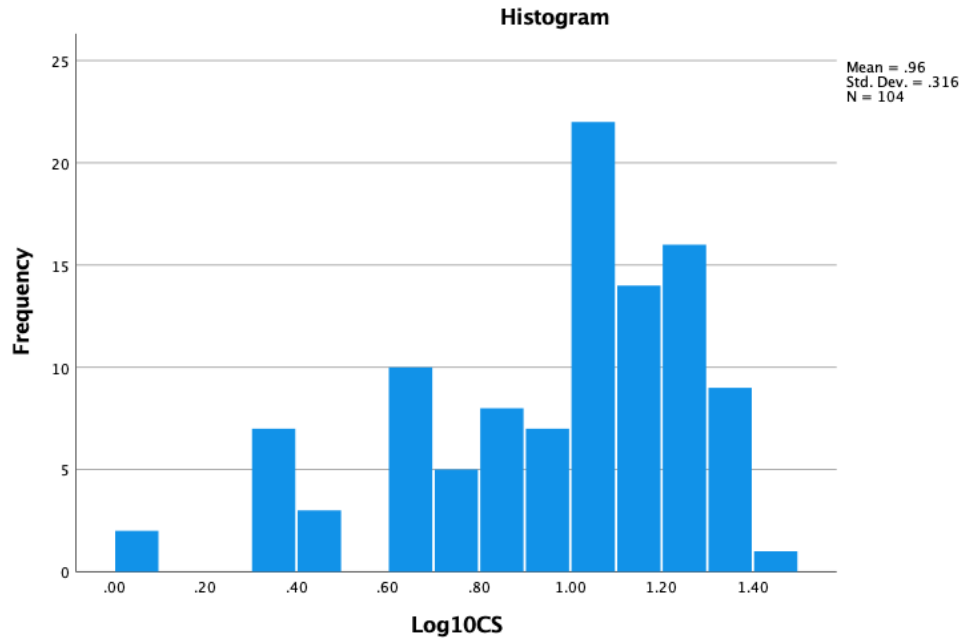# Appendix O

Histogram and Q-Q plot for Compassion Satisfaction
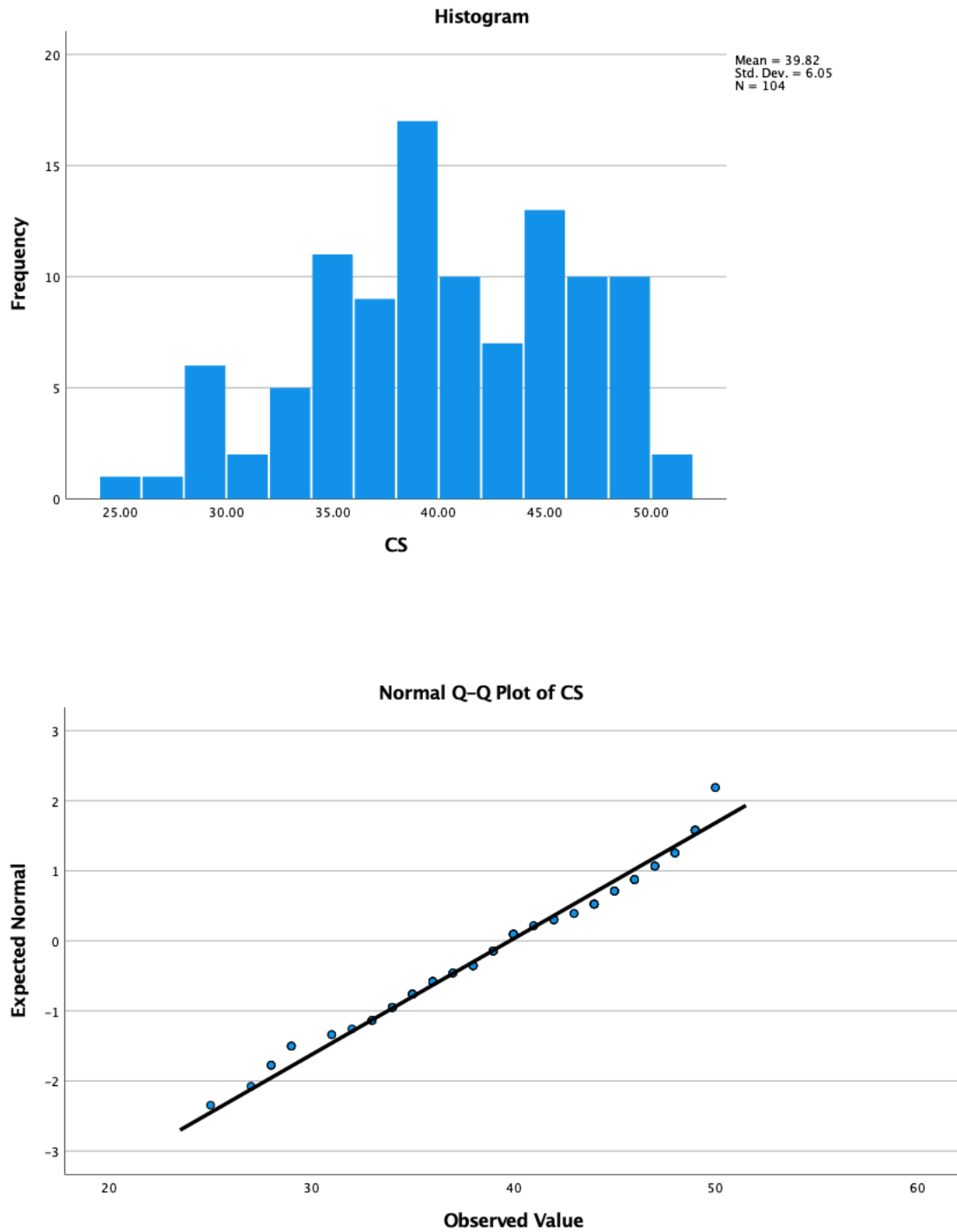
Appendix P

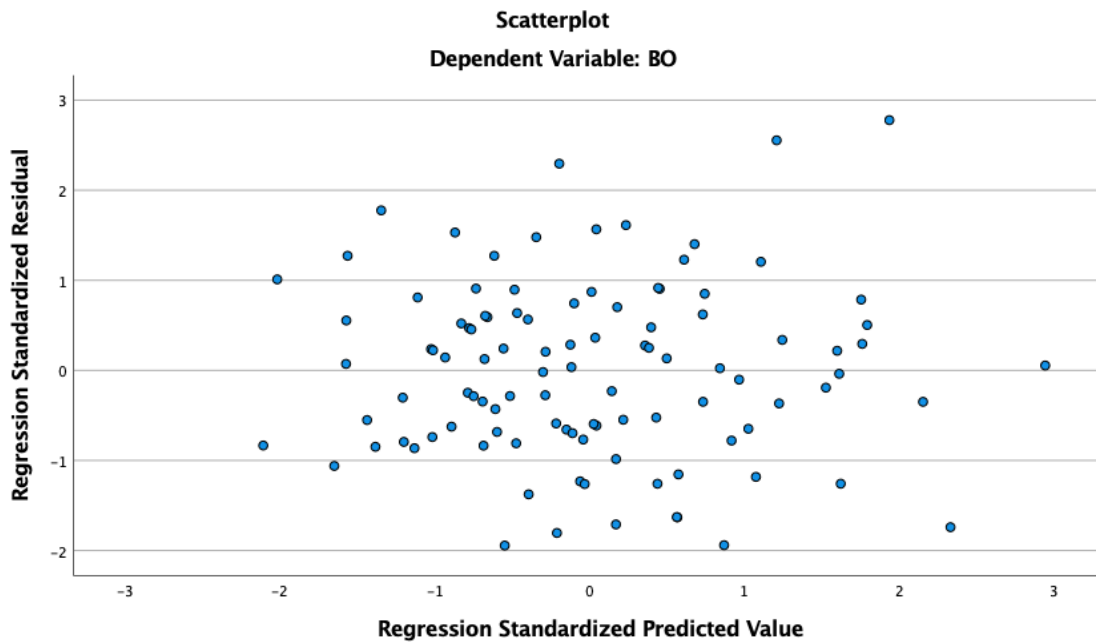Logarithmically Transformed Secondary Traumatic Stress Histogram and Q-Q plot

Histogram

Mean = 1.36
Std. Dev. = .131
N = 104

Normal Q–Q Plot of Log10STS

Appendix Q

Logarithmically Transformed Compassion Satisfaction Histogram and Q-Q plot

Appendix R

Scatterplots of Standardised Residuals for Burnout

Normal P-P Plot of Regression Standardized Residual
Dependent Variable: BO
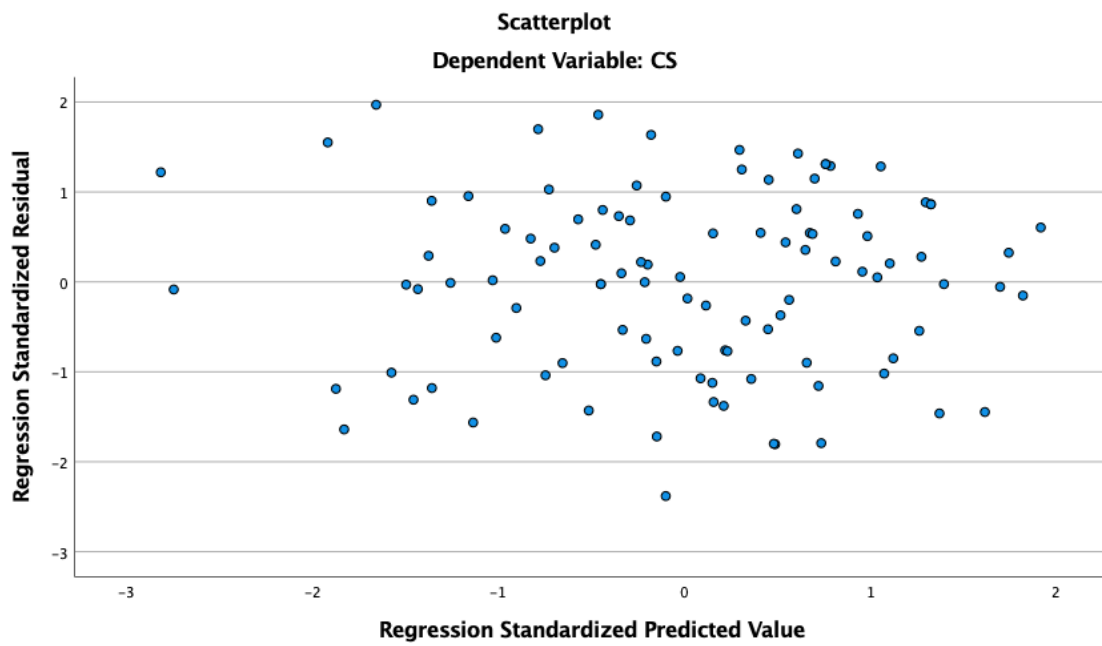

Scatterplot
Dependent Variable: BO
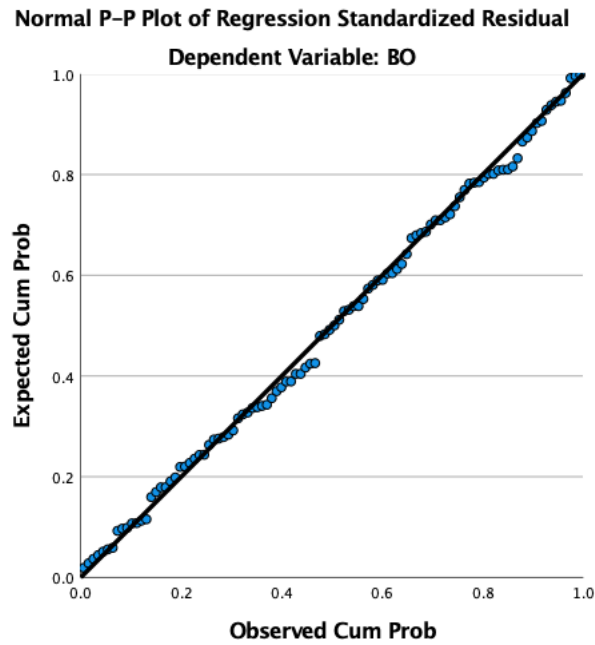
Appendix S
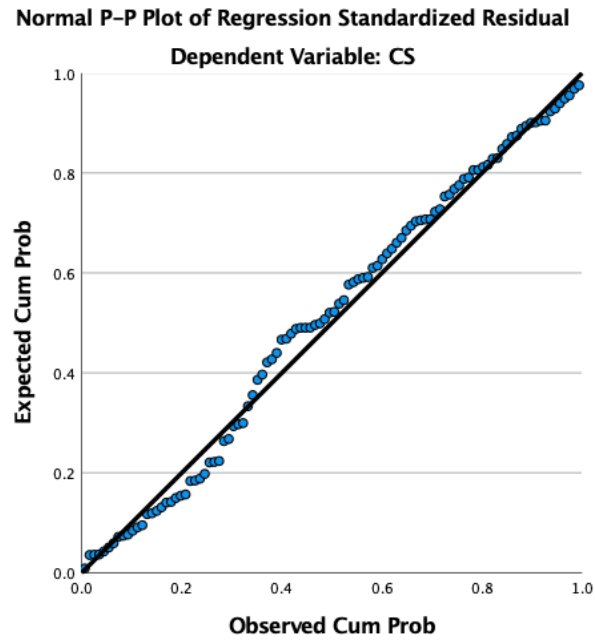
Scatterplots of Standardised Residuals for Secondary Traumatic Stress
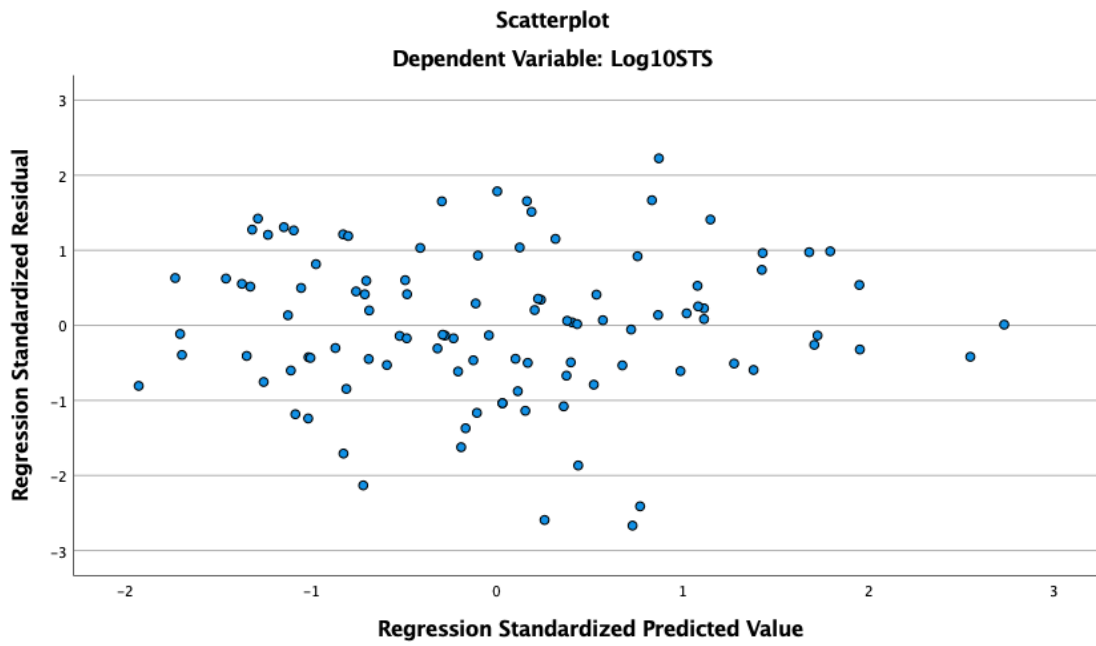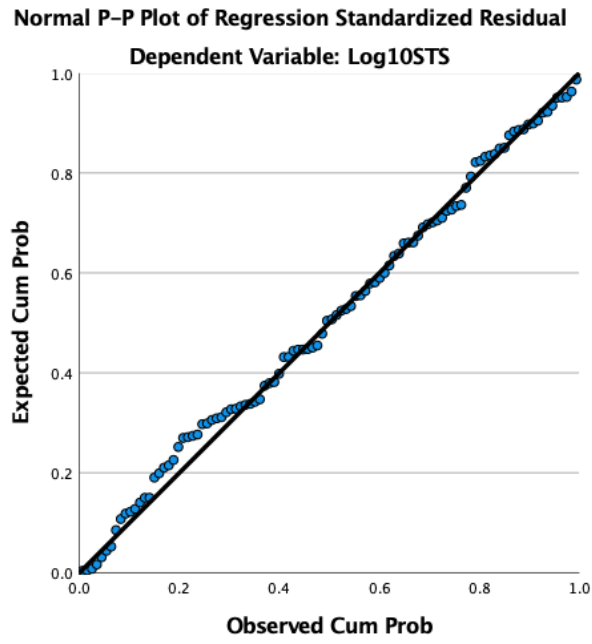
Appendix T

Scatterplots of Standardised Residuals for Compassion Satisfaction

Collinearity Statistics

	Burnout		Secondary Traumatic Stress		Compassion Satisfaction	
	Tolerance	VIF	Tolerance	VIF	Tolerance	VIF
Coping self-efficacy	.663	1.508	.655	1.527	.663	1.508
Anxious attachment	.681	1.469	.675	1.482	.681	1.469
Avoidant attachment	.802	1.247	.802	1.247	.802	1.247
Supervisory support satisfaction	.869	1.151	.86	1.163	.869	1.151
Stereotyped behaviours	-	-	.975	1.026	-	-

Note. VIF, variance inflation factor

Appendix V

Moderation Analysis of Coping Self-Efficacy on Avoidant Attachment and Secondary Traumatic

Stress

	b	SE	t	p
Constant	1.613	.053	30.189	< .001
Avoidant attachment	.013	.012	1.078	.284
Coping self-efficacy	- .001	.000	-2.736	.007
Avoidant attachment X Coping self-efficacy	.000	.000	.021	.984

Note. SE, standard error.

Simple Slope Graph of Avoidant Attachment on Compassion Satisfaction for Low, Mean and High

Levels of Coping Self-Efficacy.
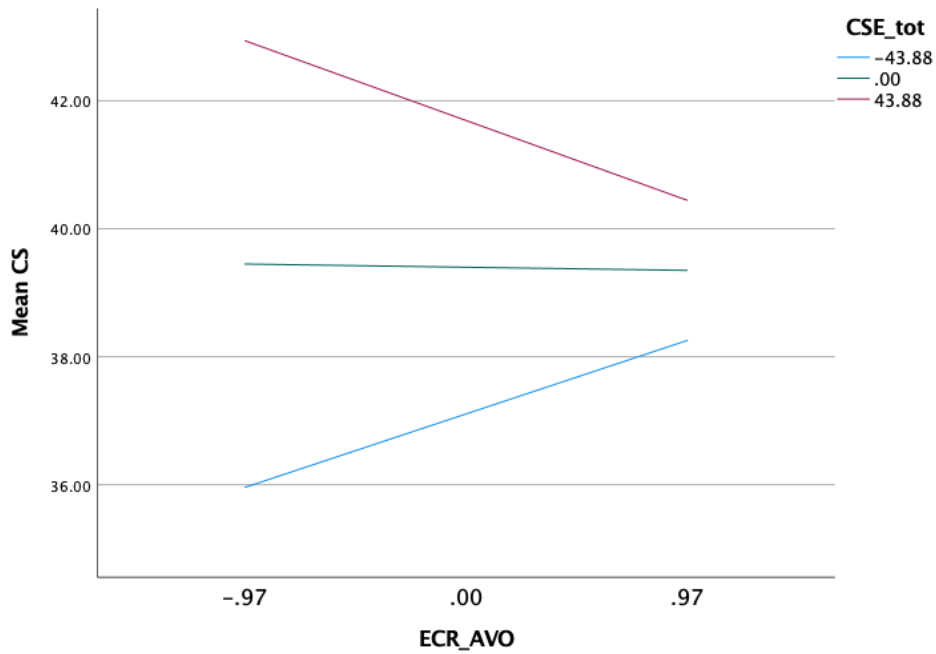
Note. CS, compassion satisfaction. ECR_AVO, avoidant attachment. CSE _tot, coping self-efficacy.