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**Working in a demanding environment: employee
wellbeing in secure forensic settings**

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Doctorate in Clinical Psychology

The University of Edinburgh

May 2016

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Acknowledgement

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Working in a demanding environment: employee wellbeing in secure forensic settings

Complete Thesis Abstract

Introduction: Care professionals suffering with poor wellbeing is a phenomenon that has been found to have a damaging effect upon individual employees, service users and organisations. Employees working in forensic settings are believed to be at increased risk of damaged wellbeing due to the unique demands of their working environment, including exposure to violence and aggression. This issue was addressed in two ways. Firstly, a systematic review of the literature on the effectiveness of person-centred interventions to improve the wellbeing of forensic professionals was prepared. Following this, an empirical study was completed which examined the ability of demands related to violence and aggression, and resources of two types (cognitive and contextual behavioural) to predict the wellbeing of employees in a high secure forensic mental health (FMH) hospital.

Method: For the systematic review, relevant databases were systematically searched and 7 papers that met the inclusion criteria were identified. The included studies were quality assessed to identify strengths and weaknesses. For the empirical study, 142 employees at a high secure FMH hospital completed self-report questionnaires which examined their wellbeing, perceptions of the prevalence of aggression, beliefs about safety, attitudes towards aggression, and psychological flexibility.

Results: The reviewed studies included psychological, educational and mixed type interventions. Evidence for the effectiveness of interventions was mixed, and problems with methodological quality common. The results of the empirical paper suggested that exposure to violence and aggression was not a good predictor of wellbeing. However, the beliefs staff held about safety and staff's level of psychological flexibility were predictive of wellbeing.

Conclusions: The review concluded that the existing evidence for the effectiveness of person-centred wellbeing interventions for forensic professionals was generally of poor quality, and inadequate to provide firm recommendations. Further research to assess the effectiveness of interventions and the underlying mechanisms of wellbeing change in forensic settings was advised. The empirical paper concluded that job demands related to staff's cognitive appraisal of safety, and the contextual

behavioural resource, psychological flexibility, were predictive of staff wellbeing. It was recommended that future interventions to improve the wellbeing of forensic professionals consider the psychological processes staff encounter in the workplace, with a particular focus on contextual behavioural resources, which have an existing evidence base in broader occupational fields. Further research using contextual behavioural interventions within forensic settings is recommended in order to develop the limited research on forensic professionals' workplace wellbeing.

Person-centred interventions to improve the wellbeing of institution based forensic professionals: a systematic review

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Person-centred interventions to improve the wellbeing of institution based forensic professionals: a systematic review

2.1 Abstract

The systematic review aimed to evaluate the effectiveness of person-centred interventions to improve the wellbeing of institution based forensic professionals when compared to no intervention or an alternative intervention. Relevant databases were searched systematically and 7 papers that met the inclusion criteria were identified. Interventions included educational, psychological and mixed interventions. Results on effectiveness were mixed. Overall, the methodological quality of included studies was poor, often with inadequate sample sizes to detect an effect of the interventions, even where one may have existed. At present there are not enough robustly designed, adequately powered studies to provide firm recommendations about the effectiveness of person-centred interventions to improve the wellbeing of institution based forensic professionals. Further research which considers the underlying mechanisms of wellbeing change is required to develop the evidence base in this field.

2.2 Keywords: Forensic staff, wellbeing, interventions

2.3 Introduction

In the UK, 131 million days were lost to sickness absence in the year 2013, equivalent to 4.4 days per worker (Office for National Statistics, 2014). The third most common reason for absences (after muscular skeletal conditions and minor illness) was mental health difficulties, including stress, anxiety and depression. Sickness absence has been identified as particularly problematic for those working in health and prison settings. For prison officers in Scotland an average of 10.5 days per staff member were lost to sickness absence in the year 2014-2015, with staff identified as being at greater risk of stress than other civil servants (Scottish Prison Service, 2015). Similar difficulties have been observed in healthcare services where sickness absence is found to impact upon service delivery, increases pressure on staff and patients, and has high financial costs to organisations due to reduced efficiency and expenses related to providing staff cover (The Scottish Government, 2014).

Despite the common use of the term wellbeing within health and social science research, the concept has proven complex and difficult to define (La Placa, McNaught, & Knight, 2013). The plethora of definitions of wellbeing (Gillett-Swan & Sargeant, 2015) has recently led many researchers to agree that wellbeing is a multidimensional construct (Dodge et al., 2012) which has been conceptualised and measured differently according to the research context (Gillett-Swan & Sargeant, 2015). Within occupational settings, conceptualisations of wellbeing often include affective, behavioural, motivational and physical health states (Diener, Suh, Lucas, & Smith, 1999). This has led to a variety of proxy measurements being used to estimate wellbeing, including job satisfaction, anxiety, depression, burnout, health status, sickness absence and occupational turnover.

In an attempt to overcome the difficulties in defining wellbeing Dodge et al. (2012) proposed a new definition of the term as “the balance point between an individual’s resource pool and the challenges faced” (p.230) where resources and challenges can be psychological, social or physical. The definition is promoted by Dodge et al. (2012) as a simplistic, optimistic, universally applicable model that provides a basis for measurement. However, it has been criticised for missing the complexities of wellbeing (La Placa et al., 2013) by those who advocate alternative and more nuanced definitions (for example, McNaught, 2011). Despite this critique, Dodge et al.’s (2012) definition sits well with popular balance point models of workplace stress, including, the Job Demands Control (JD-C) model (Karasek, 1979); the Effort Reward Imbalance (ERI) model (Siegrist, 1996); and the Job Demand Resource model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Schaufeli & Bakker, 2004). Whilst the JD-C and ERI models are prescriptive over the nature of demands and resources which impact upon wellbeing, both Dodge et al.’s (2012) definition and the JD-R Model (Demerouti, et al., 2001) provide flexibility in considering the factors which impact upon wellbeing. This is helpful when considering the forensic environment where the nature of demands may be unique to that work context. Therefore, the flexibility of the Dodge et al.’s (2012) balance point model is suited to the present review.

Forensic professionals in both health and correctional roles face a number of demands due to the complex nature of their working environment and the service users they care for. Typically demands include: responsibilities of maintaining security within an environment of compulsory detention and treatment (Finney,

Stergiopoulos, Hensel, Bonato, & Dewa 2013); working with clients with complex difficulties with mental health or personality (Bower, 2002; Mason, 2002); experiencing distressing social problems (Thorpe, Righthand, & Kubick, 2001); and managing challenging behaviour, aggression and violence (Jenkins & Elliot, 2004). It is estimated that these demands lead to increased staff burnout in forensic populations compared to other occupations (Finney et al., 2013). Currently there is limited research which compares the experiences of forensic professionals working in prisons to those employed in Forensic Mental Health (FMH) settings. Although both have a forensic client group, differences between the environments and the impact of differences in the professional background, training and experience of staff are unknown.

Recent reviews of correctional officer stress are limited, the most recent include a systematic literature review of correctional officer stress based on 43 studies from 9 countries by Schaufeli and Peeters (2000) and a meta-analysis which examined the predictors of job stress in correctional officers from 20 studies (Dowden & Tellier, 2004). Schaufeli and Peeters (2000) identified stressors including: role problems; stressful social contacts with superiors, prisoners, and colleagues; work overload; and poor social status as the most prominent psychosocial risk factors of working in a forensic setting. However, the results must be viewed with caution due to the cross-sectional nature of included studies which tended to have low numbered convince samples using self-report measures. Therefore, the objective accuracy of the findings and their ability to generalise to other forensic settings is unknown. For Dowden and Tellier (2004), work attitudes (such as participation in decision-making, job satisfaction, commitment, and turnover intention) and specific correctional officer problems (including role difficulties and perceived dangerousness) had the strongest predictive relationships to job stress. As a meta-analytic review, the study provided a good mechanism for systematically aggregating the results of research on correctional officer stress. However, the design allowed potential bias into findings by only including published studies and limiting the type of stress reactions measured (for example, by excluding burnout) in order to maintain homogeneity. Again the reliance on self-reports to measure correctional officer stress is a limitation of the included studies, particularly within correctional settings where under-reporting of stress may occur in order to maintain an admired “macho image” (Cheek & Miller, 1983). In summary, although there is some evidence describing the nature

of demands in correctional settings, difficulties in accurate measurement, sampling, and methodological biases may limit the generalisability of findings, particularly beyond the correctional context in which studies were set.

Studies of FMH professionals' wellbeing are also limited, yet, the broader general and inpatient mental health literature identifies a similar pattern of high job demands and negative stress reactions (Jenkins & Elliot, 2004; McVicar, 2003; Ward, 2011). However, the lack a specific FMH wellbeing literature makes it difficult to understand how the demands faced in FMH compare to those in non-mental health forensic settings or other non-forensic mental health settings. This is particularly true given that, FMH settings are often acknowledged to have a higher risk of violence against staff than their non-forensic counterparts, which may contribute to increased stress (Coldwell & Naismith, 1989), yet current evidence to support this is limited (Dickinson & Wright, 2008).

Understanding and improving staff wellbeing is an essential task for forensic services in order to protect individual employees, improve outcomes for service users and decrease the burden of poor employee wellbeing on organisational resources. For individuals, poor wellbeing is linked to poor physical health (Cooper, Dewe, & O'Driscoll, 2001; Health and Safety Executive, 2001), depression (Greenglass & Burke, 1990) and negative consequences for family and marital satisfaction (Burke & Greenglass, 2001). Studies have also shown a relationship between staff stress and staff behaviour that is not in the best interest of service users. For nurses, burnout is related to patient perceptions of poor care (Leiter et al., 1998; Vahey et al., 2004), failure to recognise patient distress (Aiken, Clarke, & Sloane, 2002), increased prescription medication use and reduced patient contact (Cronin-Stubbs & Brophy, 1985), and greater use of seclusion (Whittington & Mason, 1995). For correctional officers poor wellbeing is also linked to unsafe correctional facilities (Finney et al., 2013). Conversely, engagement in the workplace has been linked to reduced physician errors (Prins et al., 2009) and safer patient outcomes (Laschinger & Leiter, 2006). This evidence suggests that staff wellbeing is highly relevant to individual staff and service user outcomes, and appears to be an essential component to the provision of effective forensic services. Organisationally, poor staff wellbeing can result in reduced staff effectiveness, lower productivity, increased absenteeism and increased staff turnover (Firth & Britton, 1989; Goetzl, Ozminkowski, Sederer, & Mark, 2002; Parker & Kulik, 1995), and could deter people from joining certain

occupations (Medland, Howard-Ruben & Whitaker, 2004). It is clear that poor staff wellbeing impacts staff, patients and forensic organisations, but many questions remain over what can be done to relieve these difficulties.

The importance of workplace wellbeing has been highlighted in a number of reviews which have focused on the sources of occupational stress in forensic settings (Dickinson & Wright, 2008; Dowden & Tellier, 2004; Schaufeli, & Peeters, 2000). Fewer studies have considered the impact of interventions to improve the wellbeing of forensic professionals. A number of systematic literature reviews of occupational wellbeing interventions have been completed in related areas, including samples of general employees (Awa Plaumann, & Walter, 2010), healthcare workers (Ruotsalainen, Verbeek, Mariné, & Serra, 2015), mental health nurses (Edwards & Burnard, 2003), mental health workers (Turner, 2013), staff working in psychiatric settings (Gilbody et al., 2006) and nurses working in secure settings (Stewart, 2013). Only the final study had a specific focus on staff working within the forensic domain, however, the research was limited to staff working in nursing or health related forensic roles. The findings provided some evidence for the use of clinical supervision and psychosocial skills training in reducing burnout in qualified forensic mental health nurses and noted that supportive relationships could reduce forensic nurses' emotional stress. However, as only five studies were included in the review which excluded non-healthcare forensic staff, the ability to generalise the results to wider forensic settings is limited. For employees in prison settings there are no existing systematic reviews of interventions to improve staff wellbeing. Systematic reviews have instead focused on the relationships between job demands and stress reactions (Dowden & Tellier, 2004; Finney et al., 2013; Schaufeli & Peeters, 2000). A recent narrative review concluded that there were few studies designed to assess the effectiveness of interventions for US correctional staff (Brower, 2013) unfortunately the study methodology was not systematic, leading to a greater potential for bias and incomplete references. Brower (2013) highlighted the findings of McCraty et al.'s (2009) study (RCT) which concluded that emotion-focused stress management groups could be effective at improving psychological and physiological wellbeing for prison officers working in juvenile facilities. However, the generalisability of these findings to those working in adult institutions remains unclear.

Overall, evidence for effectiveness of interventions designed to improve the wellbeing of forensic professionals is incompletely covered in existing systematic reviews. Reviews focused on related professional roles have generally included studies of poor quality, which has made it difficult to appraise the interventions which are most effective at improving the wellbeing of forensic professionals, or have had a narrow scope which has made it difficult to evaluate the impact of interventions on a range of forensic professional roles. The current review aimed to address this gap in knowledge by identifying existing studies which assessed the outcomes of educational or psychological interventions designed to improve the wellbeing of forensic professionals at an individual level when compared to no intervention or an alternative intervention. The findings from the included studies were then quality assessed, synthesised and discussed in order to determine the most effective educational or psychological interventions for the improvement of wellbeing in forensic professionals.

2.4 Methodology

In accordance with guidelines (Shamseer et al., 2015) a protocol for review was pre-registered on PROSPERO (last updated 22nd February 2016) and can be accessed at: www.crd.york.ac.uk/PROSPERO/display_record.asp?ID=CRD42016033524

2.4.1 Participants / population

Included studies recruited Mental Health Professionals (nurses, support workers, psychologists, psychiatrists, Allied Health Professionals, other medical professionals) or criminal justice personnel (prison officers, prison health care staff) working in forensic settings with a direct role in patient or offender care. Forensic settings included inpatient forensic mental health facilities and prisons or correctional institutions. Studies focusing on generic psychiatric settings; non-forensic settings; forensic settings which solely cared for older adults, people with intellectual impairments, or children and adolescents; mental health professionals employed in other areas (community settings, general psychiatric settings); or criminal justice workers employed in non-custodial or community settings (e.g. police custody officers, community based forensic teams) were excluded.

2.4.2 Intervention(s), exposure(s)

Any person-directed interventions designed to enhance the wellbeing of forensic professionals at an individual level. This included educational interventions, psychosocial interventions or a mixture of both. Organisational and environmental interventions, such as changes to the physical environment or care model, post-critical incident interventions, or interventions for professionals actively seeking help for mental health difficulties (e.g. post-traumatic stress, depression, anxiety) were excluded.

2.4.3 Comparators

Studies with and without control groups were included. Those with control groups included inactive control (e.g. wait-list or ordinary practice) or alternative interventions.

2.4.4 Outcomes

Following Cochrane's (Higgins & Green, 2011) recommendations that systematic reviews investigate all intervention effects rather than limiting search strategies to specific outcomes, all quantitative self-report scales of occupational wellbeing were included. Examples of considered outcomes included: psychological wellbeing, job satisfaction, burnout, stress, sickness absence, turnover intention, and health status. Primacy was given to outcomes derived from validated or standardised measures. Studies without quantitative wellbeing outcomes were excluded.

2.4.5 Types of studies included

Cochrane Effective Practice and Organisation of Care (EPOC, 2013) guidelines suggest that the following four types of study designs should be included in systematic reviews: Randomised Control Trials (RTC); Controlled Clinical Trials (CCT); Controlled Before and After Studies (CBAs); Interrupted Time Series (ITSs). Although these guidelines represent best practice, it was acknowledged that randomised and controlled trials are often not available to address questions about the effects of workplace wellbeing interventions. For this reason a broader range of studies, including those without control groups, such as uncontrolled before and after studies, were included.

2.4.6 Search Strategy

Reviewer one conducted a search for relevant published and unpublished articles in the following databases: MEDLINE (PubMed), PsycINFO, EMBASE, CINAHL, International Bibliography of the Social Sciences, Applied Social Sciences Index and Abstracts (ASSIA); Social Services Abstracts; PAIS International and Proquest Criminal Justice. Additional hand searching considered relevant articles from the reference lists of included articles. In order to minimise publication bias grey literature was searched using Proquest dissertation and thesis global, and by internet searches for reports from relevant organisations. The reviewer also contacted authors of prospective studies in an attempt to retrieve any unpublished results. No time restrictions were placed upon the searches. Searches were limited to articles written in English as resources for translation services were not available. Last date searched was 24th February 2016.

2.4.7 Search Terms

Search terms of the following four types were included:

1. Wellbeing outcomes: stress, sickness absence, turnover, burnout.
2. Job role: nurse, psychiatrist, psychologist, and care assistant.
3. Workplace: prison, secure hospital, correctional facility.
4. Intervention terms: training, supervision, professional development, intervention.

As per PRISMA guidelines (Moher, Liberati, Tetzlaff, & Altman, 2009) an example of the full electronic search strategy is included in Appendix 1.

2.4.8 Study Selection

As detailed in figure 1, retrieved literature was reviewed and duplicates removed. Reviewer one independently inspected studies and applied inclusion / exclusion criteria using title and abstract. Full text articles were obtained for all studies which met inclusion criteria and for those where suitability could not be determined via title and abstract. All full text articles were independently scrutinised against the inclusion criteria by reviewers one and two, resulting in 100% agreement on

inclusion between the reviewers. Reviewer two was a NHS research assistant and PhD student who was independent from the study. Data was extracted from all studies included at this stage and is displayed in table 1.

Figure 1: Diagram of selection process based on Moher et al. The PRISMA Group (2009)

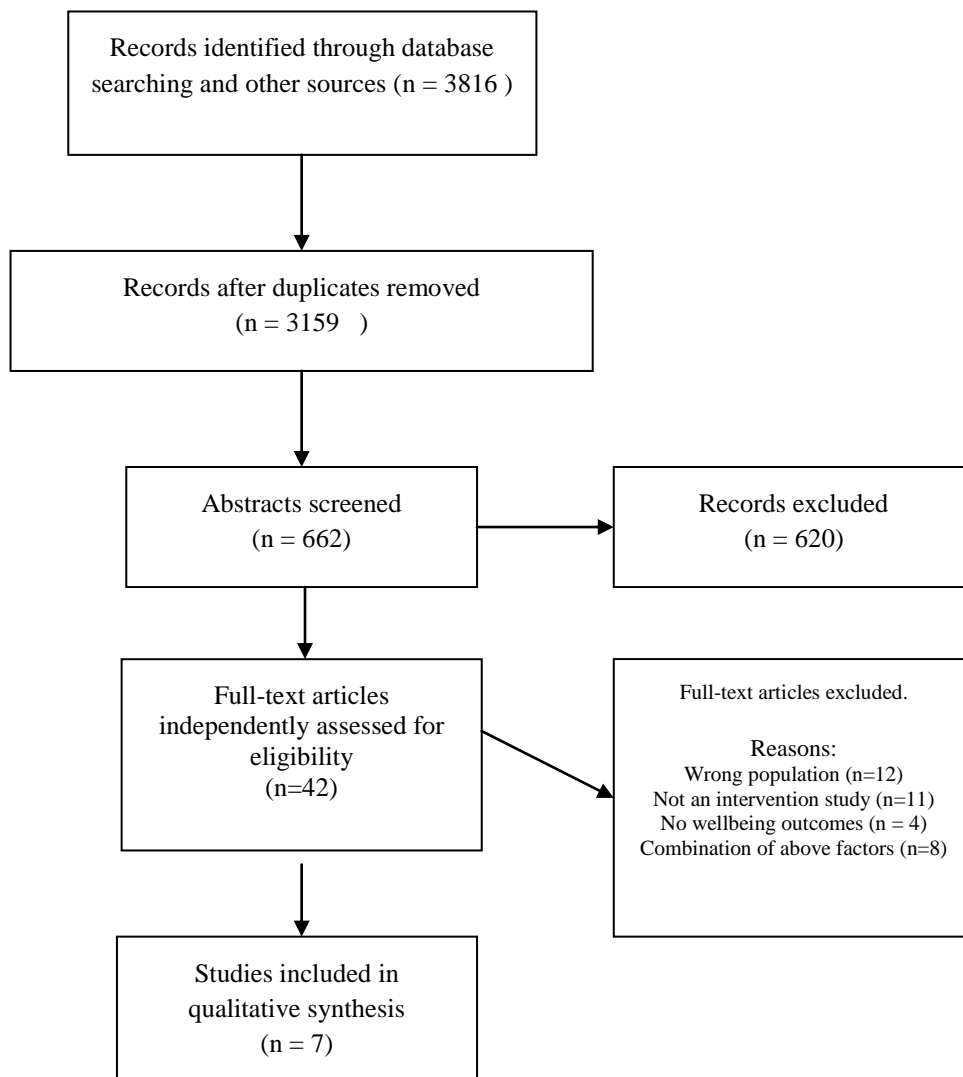


Table 1: Overview of included studies

Author Year Country Design	Setting Participants Sample Size	Intervention and control conditions	Outcome measure	Results and analysis	Key findings
Redhead, et al. (2011) UK RCT	Low Secure Forensic Unit Qualified Nurses (QN) and Unqualified Nurses (UQN) (total n=42)	Experimental: n=22 (QN =12, UQN = 10). PSI Training delivered over 8 months: QN- 16 half-day sessions = 8 days. UQN – 8 half day sessions total =4 days Also group supervision Waitlist Control: n =20 (QN = 9, UQN = 11)	MBI	QN: Sig. decrease in DP*, NS difference in EE and PA (exp. vs. control group) UQN: No sig. diff. in any subscale of MBI (exp. vs. control group). QN: MBI: EE: d = 0.09 DP: d = 1.19 PA: d = 0.56 UQN: MBI: EE: d = 0.54 DP: d = 0.055 PA: d = 0.41	PSI training was beneficial. Association between PSI training and reduction in burnout is worthy of further investigation.
Ewers, et al. (2002) UK RCT	Low Secure Forensic Unit Forensic Mental Health nurses (n=20)	Experimental: n=10: 20 days of PSI training over 6 months Waitlist Control: (n=10)	MBI	Sig. decrease in EE* and DP**, sig. increase in PA**.	PSI training can protect against burnout
Doyle, et al. (2007) UK RCT	Medium secure Forensic unit Qualified staff (n=26)	Experimental: n=14 (Nursing = 9, non-nursing = 5) 16 weekly 3-hour sessions of PSI training, total = 8 days Waitlist control: n=12 (Nursing = 7, non-nursing = 5)	MBI	Sig. increase in PA in experimental group*. No sig. changes in EE and DP. No sig. changes in PA, EE or DP (exp. vs. control group)	PSI appears to have a positive effect, but cannot realistically resolve all issues related to burnout. Suggests a need for forensic orientated PSI.

Johns (1986)	Maximum security correctional facility	Experimental: (n=10 per condition) (a)Stress Education Training (SET) 2 hours (b)SET + 4 hours internal skills module (INT) (c) SET + 4 hours external skills module (EXT) (d) SET + INT + EXT	Job-Related Tension Index, MBI (Derogatis Stress Profile, Irrational Beliefs Test, Novaco Provocation Inventory, Assertion Inventory, Affective Sensitivity Scale—Form E, and the Jenkins Activity Survey—Type A Scale)	No sig. changes pre-post intervention of between conditions.	Delivery of the two modules, either alone or combined, was no more effective than the Standard Treatment Control and the No-Treatment Control.
USA	Correctional officers n=55 (n=50 included in analysis)	Waitlist Control (n=10)			
RCT					
Gonzalez (2009)	Two forensic units at a Metropolitan State Hospital	Experimental: (n=17, intact forensic ward) Four weekly 1 hour sessions of active listening training.	MBI –HSS	No sig. diff. between groups pre and post for EE D, PA	Active listening training did not affect the level of burnout experienced
USA	Nursing staff: registered nurses, psychiatric technicians and licensed vocational nurses (n=38)	Control (n=21, intact forensic ward) no intervention			
N-RCT					

Bravo-Mehmedbasic et al. (2009)	2 federation of Bosnia & Herzegovina prisons (Sarajevo and Zenica) 1 republic Srpska prison (Kula)	Experimental:(n=122) Psychiatrist led workshops covering stress coping and communication skills	STAI (Reactions Indeks, SAMACA)	Sarajevo Sig. reduction in: stress reaction indeks**; STAI*; SAMACA-A: Exposure to stressful situations**; SAMACA-B stress reactions*) No sig. difference in coping strategies	Authors reported that psycho-education had a positive effect and should be obligatory in prison guard training. However, the findings were mixed and did not support this conclusion for wellbeing outcomes.
Bosnia and Herzegovina	Prison Guards Sarajevo (n=38), Zenica (n=33) Kula (n=51)	Control: n/a		Zenica – no statistically sig. diff. pre and post on any measure Kula: Statistically sig. increase in stress measured by STAI post intervention*	
Thomason & Pond (1995)	Large South-Eastern Prison	Experimental: (a)Stress Management Training (SMT; n=13) 9 hours, 6 session (b) SMT+ Self- management (SM) (n=14)30 minutes additional SM per session (3 hours total)	Psychological: STAI- Y, Job satisfaction (JIG); Physiological: Blood pressure; Somatic Symptoms: SCL-90-R	Pre-post and follow up at 3 and 6 months. SMTSM group showed statistically sig. diff. over time for psychological*, physiological** and somatic symptoms*	SMT had some impact on physiological, somatic and anxiety, but differences were not statistically significant. SM augmented SMT result. SMTSM group showed sig change on blood pressure, somatic symptoms and state trait anxiety and appeared to protect against post training decay.
USA	Custody staff n=83 volunteered to take part n=54 analysed at completion	Control (c) Personal Development (n=14) 9 hours, 6 sessions. (d) waitlist (n=13)			
RCT	Predominantly male. Modal Ages, 36-40 and 41-45				

*= $P < .05$, **= $p < .001$. Key: RCT = randomised control trail. N-RCT = non-randomised control trial; UBA = uncontrolled before and after study; EE = emotional exhaustion; DP depersonalisation; PA personal accomplishment. Sig. = significant, Diff. = difference.

2.4.9 Risk of Bias Assessment

Reviewers one and two independently classified the design of included studies using an algorithm developed by Hartling, Bond, Santaguida, Viswanathan, & Dryden (2011). Each reviewer also independently assessed the quality of studies using the Downs and Black (1998) quality assessment checklist as recommended by the Cochrane handbook for systematic reviews for the review of non-randomised studies (Higgins & Green, 2011). The 27 item checklist contains yes and no questions in five quality areas: study quality (10 items) assesses general study quality; external validity (3 items) assesses generalisability; study bias (7 items) assesses bias in interventions and measured outcomes; confounding and selection bias (6 items) assesses sampling and group assignment bias; and study power (1 item) to consider if findings are due to chance. Studies receive a study quality score with higher scores indicate better quality. The original tool is scored out of maximum of 32 points; however, the final question (Q27) is noted to be ambiguous and difficult to score in its original 0-5 point form (Eng et al., 2007). Thus, it was modified into a three point scale. Two points were awarded to studies where power had been calculated a priori or post hoc and the study had an adequate sample size; one point where a priori power calculations had been performed but an adequate sample was not met, or where power calculations were not reported, but sufficient data was provided to calculate that the study had met an adequate sample size; and zero points where no power calculation had been reported, insufficient data was provided for a power calculation, or the data provided to enable the calculation of power suggested that an adequate sample size was not met. This gave a maximum score of 30. The Downs and Black (1998) tool was chosen as it can be used to assess the quality of both randomised and non-randomised evidence. The tool has an Inter-rater reliability of .75r and a test re-test reliability (at two weeks) of 0.88r (Deeks et al., 2003). There was strong agreement (McHugh, 2012) between raters 1 and 2 in the present review with Cohen's kappa $\kappa = .854$ (95% CI, .785 to .922), $p < .0005$.

2.4.10 Synthesis

A description and summary of studies characteristics and effects are provided in table 2. Quantitative synthesis of results was not appropriate due to clinical heterogeneity (of interventions, outcome measures, follow up periods and populations) and methodological heterogeneity (of study designs and quality)

between the included studies. Instead, a narrative overview of design features and results is provided according to intervention type.

2.5 Results

2.5.1 Participants

From 3816 citations, 7 met inclusion criteria. The reviewed studies included 352 participants, a breakdown of participants by professional group is provided in table 2 for further details by study see table 1.

Table 2: Job roles held by participants included in the review

Professional group	N (%)
Prison officer	226 (64.20%)
Nurse	116 (32.95%)
Non-nursing qualified mental health professional	10 (2.84%)

2.5.2 Setting

Evaluations were conducted in a range of forensic settings, including two UK medium secure forensic mental health facilities (Doyle, Kelly, Clarke, Braynion, 2007; Redhead, Bradshaw, Braynion, & Doyle, 2011); one UK low secure forensic mental health facility (Ewers, Bradshaw, McGovern, & Ewers, 2002); two forensic wards at a USA State Hospital (Gonzalez, 2009); two Prisons in the USA (Johns, 1986; Thomason & Pond, 1995); and three prisons in Bosnia and Herzegovina (Bravo-Mehmedbasic et al., 2009). In the majority of studies, interventions were allocated and delivered on an individual basis, except for Gonzalez (2009) where allocation was decided based upon ward.

2.5.3 Wellbeing Outcome Measures

Four studies (Doyle et al., 2007; Ewers et al. 2002; Gonzalez, 2009; Redhead et al., 2011) used the Maslach Burnout Inventory (MBI, Maslach, Jackson & Leiter, 1996) one study (Johns, 1986) used a predecessor to the MBI, the Maslach Human Services Inventory (Maslach, 1980; Maslach & Jackson, 1981). Thomas and Pond (1995) and Bravo-Mehmedbasic et al., (2009) used the State Trait Anxiety Inventory. Thomas

and Pond (1995) specified version Y (STAI- Y; Spielberger, 1983); Bravo-Mehmedbasic et al. (2009) did not report the version used. Additional non-validated wellbeing measures were used by Bravo-Mehmedbasic et al. (2009) including the 16 item self-report “Reaction indeks” questionnaire which measured reactions to recent stressful incidents and a 44 question SAMACA questionnaire, which was divided into four parts measuring level of exposure to stressful situations, stress reactions, coping strategies, and attitudes towards detainees. References, reliability and validation details were not provided for any measures in the Bravo-Mehmedbasic et al. (2009) study. Johns (1986) also used additional wellbeing measures, including: the Job-Related Tension Index (Kahn, Wolfe, Suinn, Snoek, & Rosenthal, 1964), Derogatis Stress Profile (Derogatis, 1984), Irrational Beliefs Test (Jones, 1968), Novaco Provocation Inventory (Novaco, 1975), Affective Sensitivity Scale—Form E (Kagan & Schneider, 1980), and the Jenkins Activity Survey (JAS)—Form C, Type A Scale (Jenkins, Zyzanski, & Rosenman, 1979). Thomas and Pond (1995) recorded additional measures of: physiological wellbeing, by recording blood pressure; somatic wellbeing, using the SCL-90-R somatic symptoms checklist (Derogatis, 1977); and job satisfaction, using the Job in General Scale (JIG; Ironson et al., 1989).

2.5.4 Methodological Quality

Using the amended Downs and Black (1998) checklist studies received a score out of a total 30. Scores ranged between 7 and 18 (mean=14.29; SD=4.03) which highlighted methodological failings in all of the 7 included studies. A summary of scores is provided in table 3.

The lowest rated paper by Bravo-Mehmedbasic et al., (2009) suffered from difficulties with design and problems with reporting quality. No studies performed intention to treat analysis and reasons for dropouts were not fully explored across studies. Some studies did not clearly report drop outs and only analysed participants who remained in the treatment or control conditions (Bravo-Mehmedbasic et al., 2009, Doyle et al., 2007, Ewers et al., 2002, Redhead et al., 2011). Of the studies which did report dropout (Gonzalez, 2009; Johns, 1986; Thomas & Pond, 1995), some rates were very high (32.5% of total participants for Thomas & Pond, 1995). When considering treatment fidelity, a number of the studies reported incomplete

treatment for participants in the experimental conditions (e.g. missed sessions in Gonzalez, 2009), the effect of which was not explored in any included study.

Sample sizes tended to be small (median 50, range 20 to 122) which likely increased the chance of non-representative samples. Many samples were also limited by participant type, for example having a sample exclusively of nurses (Ewers et al., 2002) or prison officers (Johns et al. 1986), which may reduce the generalisability of the findings to other forensic professionals. A priori power calculations were not completed for any of the included studies. Instead, samples sizes appeared to be based on convenience. This can be problematic, particularly when studies did not find statistically significant results, as it may be that the sample size was inadequate to detect an effect, rather than the hypothesis in question being incorrect (Burns & Grove, 2001). Only one study (Thomason & Pond, 1995) included a longitudinal follow up at 3 and then 6 months post intervention, therefore the long term effects of most interventions remain unknown.

2.5.5 Effect of intervention on wellbeing

Intervention type was defined using a categorisation used by Cahill et al. (2004). Interventions were defined as ‘educational’ if they were designed for skill enhancement or competency development (e.g. communication skills training) and ‘psychological’ if they involved a psychotherapeutic component (e.g. counselling or a stress management training). A third ‘mixed’ subtype was added to account for interventions which were a mix of the two identified types. All interventions were delivered in a group format.

2.5.5.i Educational interventions

It is hypothesised that building skills through educational interventions can improve staff performance and reduce perceptions of the job being stressful (Gilbody et al., 2006). Four of the included studies evaluated educational interventions. One study evaluated the impact of active listening training (Gonzalez, 2009); three studies investigated the impact Psychosocial Skills Interventions (PSI) training (Doyle et al., 2007, Ewers et al., 2002; Redhead et al., 2011). PSI interventions aim to enhance resilience in service users by reducing their exposure to stress or enhancing coping skills (Mairs & Bradshaw, 2005) and are recommended by the National Institute for

Clinical Effectiveness (2009) for patients with psychotic disorders. The purpose of staff PSI training is to enhance staff ability to implement PSI.

Ewers et al. (2002) provided 20 days of PSI training over 6 months to forensic mental health nurses working in a UK medium secure unit. Using the MBI, those in the treatment group (n=10) showed a significant increase in Personal Accomplishment (PA) and a significant decrease in Emotional Exhaustion (EE) and Depersonalisation (DP), when compared to a waitlist control group (n=10) six months after the beginning of the PSI training. The study demonstrated a short-term impact of PSI training on burnout but lacked longitudinal follow up and generalisability due to the small sample size and specialised participant group. Doyle et al. (2007) provided fewer sessions of PSI training (16 weekly 3-hour sessions, totalling 8 days) to a mix of nursing (n=9) and non-nurse qualified mental health workers (n=5) also within a UK medium-secure unit. Using pre- and post-intervention scores on the MBI, the treatment group showed a significant difference in PA, but no significant difference in DP and EE when compared to the waiting list control of qualified mental health workers (nursing (n=7), non-nursing (n=5)). The authors suggested that there was a likely ripple effect of the intervention throughout the service, as it appeared that those in the control group showed improvement in attitudes and knowledge, despite not attending training. This suggests that confounding variables between treatment conditions were not well controlled within the study design. The study demonstrated a short-term benefit of PSI training on personal accomplishment. It benefitted from the inclusion of a range of forensic mental health professionals rather than only qualified mental health nurses, but had a low sample size and lacked longitudinal follow up.

Redhead et al. (2011) provided two levels of PSI training over 8 months. Qualified nursing staff (n=12) received 16 half-day sessions (totalling 8 days) and unqualified nursing staff (n=10) received 8 half-day sessions (totalling 4 days). Both groups also received small group supervision, with an unreported staff mix. For qualified nursing staff, PSI training led to a reduction in MBI measured EE and DP, and an increase in PA. When compared to the waitlist control (qualified staff, n=9), those in training group only showed a significant reduction in DP with a large effect size ($d=1.19$). For unqualified nursing staff trained in PSI, no significant changes were found for any subscale of the MBI when compared to the waitlist control (n=11). However, small and medium effect sizes for change in EE, DP and PA (0.54, 0.055 and 0.41

respectively) were detected which suggested that the sample size may not have been adequate to detect an effect. The study suggested that PSI training can improve depersonalisation for qualified staff, but demonstrated no improvements for unqualified staff. However, it is possible that this difference was accounted for by a dosage effect rather than participant type. The findings appear to have been limited by an inadequate sample size and there was no longitudinal follow up.

Gonzalez (2009) provided 4 one-hour sessions of active listening training covering topics of paying attention, holding judgment, reflecting, clarifying, summarizing, and sharing ideas for nursing staff (registered nurses, psychiatric technicians and licensed vocational nurses) on two forensic units at a Californian State Hospital (n=38). The study failed to find a significant difference between the experimental group (n=17) and control group (n=21) using pre- and post-MBI scores for EE DP, PA, and therefore suggested that there was no beneficial effect of the intervention on wellbeing.

2.5.5.ii Psychological Interventions

Psychological interventions aim to improve wellbeing by using psychotherapeutic methods (Cahill et al., 2004). Thomason and Pond (1995) provided custody staff at a large prison in two experimental conditions with Stress Management Training (SMT, n=13) or Stress Management Training plus Self-Management Training (SMTSM, n=14). Participants were exposed to six sessions (totalling 9 hours) of SMT which included cognitive restructuring, deep muscle relaxation, positive self-talk, autogenic instructions and imagery exercises. Participants in the SMTSM condition received an additional 30 minutes per session (total 3 hours) of Self-Management training which involved self-monitoring, specifying goals, evaluating monitored behaviour against goals and self-reinforcement. The wellbeing of participants in the experimental conditions were compared with an active control (n=14, 9 hours training over 6 sessions of personal development 'PD' training, which was not expected to impact upon stress reactions), and an inactive "no treatment" control (n=13). All groups' scores were recorded before training, upon training completion, and at 3-month and 6-month follow up periods. Blood pressure and somatic symptoms were found to decrease for those attending SMT, but a statistically significant difference in both measures was only found for participants in the SMTSM group. No pre-post change was found with job satisfaction for those attending the SMT. It was anticipated by

the authors that SMT would lead to a decrease in the State scale of the STAI for those in the SMT groups, but only the SMTSM group showed statistically significant reductions in STAI scores. The authors concluded that SMT reduced some stress outcomes, but not significantly. SM appeared to increase the effectiveness of the SMT intervention, as those in the SMT plus SM group showed significant reductions in blood pressure, somatic symptoms and state anxiety, which were maintained at longitudinal follow up.

2.5.5.iii Mixed Psychological and Educational

Two studies included interventions with mixed educational and psychotherapeutic components. Johns (1986) provided correctional officers at a maximum security correctional facility in the USA (N=50) with four treatment conditions: (a) standard 2 hours stress education training (SET); (b) standard SET plus 4 hours internal skills module (INT) including relaxation training and cognitive restructuring; (c) SET plus four hours external skills module (EXT) assertion training and provocation management; (d) SET plus INT and EXT. Training was delivered in hourly sessions, each condition and one waitlist control each had n=11 (n=10 at analysis) participants. No statistically significant reductions in correctional officer stress were detected in any condition. The study included no power calculations and completed an excessive amount of multiple comparisons (161 F-tests) without an adequate samples size.

Bravo-Mehmedbasic et al. (2009) provided prison officers at three prisons (n=122) in Bosnia and Herzegovina with a 'couple' of sessions (length and frequency unspecified) of lecturing psychiatrist led workshops on coping with stress and communication skills training. The exact nature and topics covered on the training were not reported. Prison officers' wellbeing was measured prior to the intervention and 6 months later. In Sarajevo Prison (n=38), significant reductions were found for stress reactions measured by the Reactions Indeks, STAI, exposure to stressful situations (SAMACA A) and reactions to stressful situations (SAMACA B). At Zenica prison (n=33), no statistically significant differences were found following the intervention. At Kula prison (n=51), a statistically significant increase in STAI scores was found post intervention. Findings were mixed with participants at different prisons showing an increase, decrease and no change in wellbeing measures

following intervention. The study did not include control groups; therefore, the detected changes could have been impacted by confounding variables.

Table 3: Quality Scoring Outline (based on Down & Black, 2008)

Quality Factor	Bravo-Mehmedbasic (2009)	Doyle (2007)	Ewers (2002)	Gonzalez (2009)	Johns (1986)	Redhead (2011)	Thomason & Pond (1995)
Study Design (e.g. RCT, Controlled before and after)	BA	RCT	RCT	N-RCT	RCT	RCT	RCT
Intervention type	Mixed	ED	ED	ED	Mixed	ED	Psych
Q1: Aim clearly described	Y	N	Y	Y	Y	Y	Y
Q2: Outcomes clearly described	Y	Y	Y	Y	Y	Y	Y
Q3: Participant characteristics clearly described	N	Y	Y	Y	N	Y	N
Q4: Interventions clearly described	N	Y	Y	Y	Y	Y	Y
Q5: Principal confounders clearly described	N	Y*	Y*	Y*	N	Y*	N
Q6: Main findings clearly described	N	Y	Y	Y	Y	Y	Y
Q7: Estimates of random variability provided	Y	N	N	Y	Y	Y	Y
Q8: Adverse events reported	N	N	N	N	N	N	N
Q9: Participants lost to follow up reported	U	U	U	U	U	U	Y
Q10: Actual p-value reported	N	N	Y	Y	N	Y	N
Q11: Sample invited representative of population	U	Y	Y	Y	U	Y	Y
Q12: Sample participated representative of population	U	U	N	U	U	U	Y
Q13: Treatment representative	U	U	Y	U	U	Y	U
Q14: Attempt to blind participants	N	U	N	N	N	N	N
Q15: Attempt to blind assessors	N	U	N	N	N	N	N
Q16: Data dredging results stated	Y	Y	Y	Y	Y	Y	Y
Q17: Analysis adjusted for follow up length	Y	Y	Y	Y	Y	Y	Y
Q18: Appropriate statistics	Y	Y	Y	Y	Y	Y	Y
Q19: Reliable compliance	U	N	U	U	U	U	U
Q20: Accurate outcome measures	N	Y	Y	Y	Y	Y	Y
Q21: Recruitment from same population	N	Y	Y	N	Y	Y	Y
Q22: Recruitment at same time	U	Y	Y	Y	Y	Y	Y
Q23: Randomised allocation	N	Y	Y	N	Y	Y	Y
Q24: RA concealed from participants and staff	N	N	N	N	N	N	N
Q25: Adjustment for confounders	N	U	U	U	N	U	N
Q26: Loss of follow up reported	U	U	U	Y	Y	U	Y
Q27: Power calculation	0	0	0	0	0	0	0
Total Score	6	14	17	16	13	18	16

RCT = Randomised Control Trial, N-RCT = non-randomised control trial, BA = uncontrolled Before and After Study. For all questions (relevant score in brackets): Y = yes (1); Y* = yes (2); N = No (0); U = Unable to Determine (0). Key: Psych = psychological; ED = educational. Mixed = mixture of psychological and educational.

2.6 Discussion

Person-centred interventions to improve the wellbeing of staff working in forensic settings appear to have received little research attention, as highlighted by the limited number of studies reviewed. The review identified a small number of educational, psychological and mixed type interventions aimed at improving the wellbeing of staff working in forensic settings. However, consistent with reviews of workplace wellbeing interventions in related professional fields (for example, Edwards & Burnard, 2003; Gilbody et al., 2006), there were common methodological difficulties with the reviewed studies, including limited sample sizes, the use of convenience sampling, and the omission of results from those who failed to complete interventions and minimal follow up periods. This made it difficult to adequately compare and assess the effectiveness of the interventions tested. The review included four studies from FMH settings and three from prison settings. There was a divide between the type of interventions employed in each setting, with FMH settings employing educational interventions, and prison setting using psychotherapeutic techniques or mixed educational and psychotherapeutic interventions. This suggests some differences in the way that wellbeing interventions have been approached between FMH and correctional settings. However, due to the low number of included studies it is difficult to understand if this extends beyond the research arena. It is also possible that positive findings in one study (for example, Ewers et al., 2002) led to follow up research using similar intervention and setting combination, therefore, creating a pattern in existing research. It is interesting that therapeutic interventions have not been tested in FMH settings, given an assumption that FMH clinicians may be cognizant in therapeutic understanding due to the mental health focus of their work. This highlights an unexplored area in FMH wellbeing intervention research which is worthy of further investigation.

Previously Gilbody et al., (2006) highlighted the need for further research on the impact of PSI training following positive results in Ewers et al., (2002) study. This was completed by Doyle et al., (2007) and Redhead et al., (2011). Both studies found positive implications of PSI training on wellbeing, but failed to replicate the significant improvements between experimental and control conditions observed by Ewers et al., (2002). Ewers et al., (2002) provided more than double the training time of each of the following studies, which may mean that the latter failed to achieve the

optimum intervention dose (Turner, 2013). Additionally, Ewers et al., (2002) was conducted in a setting of lower security, which remains an unexplored factor in evaluations of the effectiveness of intervention in forensic settings. Despite the methodological shortcomings of included papers, there is evidence of adequate quality to conclude that PSI training may have some merit in improving wellbeing of staff in forensic mental health settings, although the results are not explicit. Unfortunately, the suitability or utility of this approach in other types of forensic settings is unknown.

2.6.1 Theoretical background for research

Workplace wellbeing interventions should reflect assumptions about the causes of poor wellbeing and consider the mechanism by which the intervention will produce change. UK Medical Research Council (Moore et al., 2015) guidance highlights that evaluation studies should clearly state the theoretical underpinning of interventions so that their functioning can be fully understood and add to further development of theory. Unfortunately, many of the studies included in the review failed to meet these demands, as many of the included interventions appeared to be developed via clinical practice reasoning, rather than including a clearly defined, theoretically underpinned, change mechanism and then measuring change using these outcomes. For example, Ewers et al., (2002) suggested that training in PSI may improve wellbeing by improving clinicians' ability to conceptualise their patients' problems in a more empathetic way and may also provide skills to intervene. They suggest that this may lead to an increase in perception of self-efficacy and may lead staff to find their jobs more rewarding and less stressful. However, the study did not measure this mechanism of change by recording outcomes of self-efficacy or job reward, therefore although improvements in wellbeing were observed using this intervention, the mechanism by which PSI training achieved this change remains unclear. Moore et al., (2015) suggest that this can make replication of studies difficult, as a description of the clear mechanism which brings about change is essential to provide a clear theoretical understanding to future work. This may in some way go to explain the difference in findings reported in subsequent studies of PSI (Doyle et al., 2007; Redhead et al., 2011). It appears that due to the limited number of studies in this field the theoretical underpinning of change mechanisms in forensic staff wellbeing interventions is currently unknown. Therefore, future intervention studies may benefit from preliminary studies which consider the causal relationships between

potential change mechanisms and wellbeing as this will enable future research to have a greater theoretical grounding.

2.6.2 Strengths and limitations of the review

The inclusion of unpublished non-peer reviewed grey literature in the review reduced the potential for publication bias. Due to resource limitations, only English language publications were included in the review. This introduced a possible language bias to the results, as positive results are more likely to have been translated into English and published. Only one study included originated in a non-English language country, therefore a potential source of further evidence in this area may be gained by including studies in other languages. However, caution must be applied when generalising findings beyond their original context in this area, as significant differences exist in the practice of forensic services internationally and between distinct types of forensic settings. It is possible that staff from varied forensic environments and professional backgrounds will respond to interventions differently. However, to understand this under researched area it was important to include both types of forensic settings in the current review, despite the increased heterogeneity of the sample. The review was limited to interventions with quantitative outcomes, and excluded studies of organisational or environmental interventions. It may be that interventions in organisational domain can help to broaden the understanding of effective forensic workplace interventions; however, this was beyond the person-centred focus of the present review.

2.6.3 Implications for clinical and research practice

Due to the limited number of studies included in the review and questions about the methodological rigour and generalisability of findings, it is difficult to provide clear implications for clinical practice based upon the findings of the included studies. Despite this, given the negative effects of poor staff wellbeing on professionals, organisations and service users, it is clear that work in this area deserves continued awareness and effort. The results provide some evidence for the effectiveness of PSI training in forensic mental health settings, particularly for qualified staff and some evidence for the effectiveness of SMTSM (stress management training with self-management) in prison staff. Further research would benefit from including a broader mix of intervention types within both settings (educational interventions in prison setting and psychotherapeutic interventions in forensic mental health settings)

to increase the generalisability of findings. In order to improve the quality of studies and increase the validity of future recommendations interventions should be based on clear theoretical grounding and further work is required to understand key change mechanisms for the wellbeing of forensic staff. Greater methodological rigour is also required, including well-powered representative samples and longitudinal follow up periods.

2.7 Conclusion

The review shows that research on the effectiveness of interventions to improve the wellbeing of staff working in forensic settings is limited. Only seven relevant studies were obtained and their quality was relatively low. A narrative review of evidence suggests some observed effects of interventions; however, low sample sizes may have led studies to be underpowered and limited the ability of studies to detect an effect even if one existed. For this reason it is not possible to conclude a lack of effectiveness of interventions included in the review, even where an effect was not detected. Interventions have not yet been robustly assessed with large enough sample sizes, appropriately design studies and outcomes. Therefore, currently no firm recommendations can be made about the superiority or lack of effectiveness of workplace wellbeing interventions for staff employed in forensic setting.

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Demands, resources and wellbeing for clinicians working in a high secure forensic hospital

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3.1 Abstract

High secure forensic mental health (FMH) settings are recognised as demanding work environments where exposure to violence and aggression is assumed to have a detrimental effect upon staff wellbeing. This study examined the ability of demands related to violence and aggression, and resources of two types (cognitive and contextual behavioural) to predict the wellbeing of employees in a high secure (FMH) hospital. FMH care professionals (n=142; including, nurses, medics, allied health professionals and psychologists) completed self-report questionnaires which examined their wellbeing, perceptions of the prevalence of violence, beliefs about safety, attitudes towards aggression, and psychological flexibility. Regression analysis showed that exposure to violence and aggression was not a good predictor of wellbeing. Instead, clinician's beliefs about their safety and clinician's level of psychological flexibility were found to be the best predictors of wellbeing across outcomes. The implications of these findings for potential wellbeing interventions are discussed.

3.2 Keywords: violence, aggression, occupational wellbeing, high secure hospital, psychological flexibility.

3.3 Introduction

Mental health professionals are habitually exposed to demands in the working environment which can adversely affect staff wellbeing, decrease clinical effectiveness and have a high costs to healthcare organisations. Forensic mental health (FMH) settings are commonly identified as stressful (Kirby & Pollock, 1995) with those working in high secure services assumed to face exceptional demands. Yet, research into clinicians' wellbeing in these settings is limited.

Although wellbeing is a readily used concept, it has proven difficult for researchers to conceptualise and define (McNaught, 2011). In an attempt to overcome this difficulty Dodge, Daly, Huyton and Sanders (2012) proposed a simple, universally

applicable definition of wellbeing as “the balance point between an individual’s resource pool and the challenges faced” (p.230), where resources and challenges can take a psychological, social or physical form. When attempting to understand wellbeing at work historically theoretical models have focused on stress outcomes. Prominent models include the Job Demands Control (JD-C) model (Karasek, 1979), the Effort Reward Imbalance (ERI) model (Siegrist’s, 1996) and the Job Demand Resource (JD-R) model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Schaufeli & Bakker, 2004). Each of these fit with the assumptions of Dodge et al.’s (2012) definition, by theorising that employee wellbeing or stress results from a balance between positive (job resources) and negative (job demands) characteristic (Schaufeli & Taris, 2014). The JD-C and ERI models are prescriptive over the nature of job demands and resources examined, and as such, are restrictive and may not be applicable to all work positions (Bakker & Demerouti, 2007). The JD-R model can be tailored to the unique demands and resources in a specific workplace environment, thus enabling a broad and flexible application of the model in a variety of workplace settings. However, with this flexibility comes a lack of generalizability (Schaufeli & Taris, 2014), an important but acceptable limitation for the present study, given the unique and context specific nature of the work environment under study. A second and more important limitation highlighted by Schaufeli and Taris (2014) is that the descriptive rather than explanatory nature of the model requires the assimilation of additional theoretical perspectives to explain the psychological mechanisms underlying the relationships between demands, resources and wellbeing. However, given the exploratory nature of the present study, this is a workable position from which to investigate the workplace wellbeing of high secure FMH professionals.

3.3.1 Job demands

Job demands are defined as physical, psychological or organizational features of a job which require continued psychological and physical effort and result in poor wellbeing (Demerouti et al., 2001). The underlying mechanism of the model is supported in research which has found that job demands predict negative job strain (Bakker, Demerouti, Taris, Schaufeli, & Schreurs, 2003; Bakker, Demerouti, & Verbeke, 2004). According to the JD-R model, job demands are found in all organisations but differ by context. A focus in the present study is on the psychological demands of work.

Psychological job demands include both cognitive and emotional elements (Bakker & Demerouti, 2014), the relevance of which may differ by occupation. For example, in customer facing service roles, emotional demands may be highly prevalent during challenging interactions with customers (Bakker & Demerouti, 2007). However, in occupations focused on information rather than relationships, such as air traffic control or computer programming, cognitive processing demands may prove the most demanding. In high secure FMH environments, psychological demands are likely to include a mix of cognitive and emotional elements, with emotional factors the most prevalent. Cognitive demands may develop due to the pressures of maintaining security and the specific duties of some clinical roles, for example, processing medical and clinical file information. Emotional demands are likely to stem from the compulsory nature of detention and treatment, interactions with patients who have complex mental health problems, personality difficulties, and forensic histories (Bower, 2002; Mason, 2002); contact with distressing social problems (Thorpe, Righthand, & Kubick, 2001); and exposure to challenging behaviours and violence (Mason, 2002). Historically this has led to perceptions of high secure FMH care settings as unsafe and psychologically demanding work environments with high levels of violence and aggression. Yet, little is known about the current validity of these assumptions, or how these factors impact upon staff wellbeing.

Reports suggest that UK staff in acute psychiatric settings are at low risk of being physically injured in a violent incident (between 10% to 16% (Foster, Bowers, & Nijman, 2007, Nijman, Bowers, Oud, & Jansen 2005)). Despite this, high rates of verbal aggression do exist and can be emotionally damaging for staff (Foster et al., 2007). General research suggests that workplace aggression and violence is a job demand which can result in reduced wellbeing, increased anxiety and low rates of job satisfaction (Dickens, Piccirillo, & Alderman, 2013). It is predicted that employees in high secure FMH care settings are at increased risk of violence and aggression due to their interactions with patients with violent histories (Bowers et al., 2011). Recent studies seem to confirm this, with Pulsford et al. (2013) finding that 82% of staff (N=109) working in a high secure hospital had been involved in incidents of violence and aggression. However, the figures were self-reported by a small self-selecting sample of staff within a single hospital site, therefore, it is difficult to assess the accuracy and generalisability of the findings. Using a less

subjective design Uppal and McMurran (2009) found that rates of violent aggressive or security related incidents recorded using a UK high secure hospital's standard recording system were 0.89 incidents per patient per month during a 16-month period. This suggests that incidents involving violence are commonplace within high secure workplaces.

The prevalence of violence and aggression when working with patients with mental illness can lead to staff becoming acclimatised towards this behaviour (Dickens et al., 2013; Poster, 1996). This may increase staff preparedness for violence and reduce its disruptive effect (Mason, Lovell & Coyle, 2008). Yet, it is also possible that maintaining a constant state of vigilance may place a burden on staff and could lead to safety concerns. Fears about safety can be considered a job demand which has been linked to increased stress in general employee and nursing samples (Fagin *et al.*, 1996; Guastello, 1992; Jones, Janman, Payne, Rick, 1987). A multi-national study of psychiatric nurses (n=999, including UK staff) reported that most nurses felt unsafe at work some of the time, and a small number (n = 46) never felt safe (Poster, 1996). However, as the findings were taken from a range of nursing settings multi-nationally it is difficult to generalise the results to UK based FMH clinicians due to heterogeneity of services. Therefore, it is unsurprising that contradictory results about safety beliefs have also been reported in an Australian FMH setting. Martin & Daffern (2006) concluded that most staff believed the Australian hospital was safe using an unvalidated self-report questionnaire. Due to methodological differences between the limited studies presented, including setting heterogeneity, potential bias in small self-selecting samples, and possible self-report measurement errors, further research is required before generalisations can be made about the under theorised topic of workplace safety (Jacob & Holmes, 2011), particularly in relation to wellbeing.

An emerging theme in research to understand nurses' experience of violence has been to consider staff's attitudes towards aggression (Jansen, Dassen, Burgerhof, & Middel 2006; Jansen, Middel, & Dassen, 2005). Attitudes towards aggression are defined as a person's favourable or unfavourable evaluation of aggression which guides their reaction to that behaviour (Jansen et al., 2006). Attitudes have been divided into negative domains, which focus on the destructive, intrusive and offensive elements of aggression, and more tolerant domains, which view aggression as a communicative act or an attempt by patients to protect themselves when

powerless (Jansen et al., 2006). Currently the focus of work in this area has been to understand nurses attitudes and consider their impact on the management of violent behaviour (James, Isa and Oud, 2011; Jonker, Goossens, Steenhuis & Oud, 2008; Laiho et al., 2014). Few studies have considered the impact of these attitudes upon wellbeing. One small study found that UK mental health nurses (n=37) did endorse some tolerant statements about aggression and suggested that such attitude may be linked to lower burnout (Whittington, 2002). This suggests that more tolerant attitudes towards aggression could be a resource which may help protect staff wellbeing, however, the small and self-selecting sample used in the study makes it difficult to generalise the findings beyond the original setting, therefore further examination is required to assess the impact of such attitudes for FMH clinicians.

In summary, it appears that exposure to incidents of violence and aggression is perceived to be a common job demand for staff working in high secure FMH services, yet little is known about staff attitudes towards aggression, how safe staff feel and the impact of each of these factors upon wellbeing.

3.3.2 Job resources

Initially the JD-R model tended to focus on resources in the work environment, but more recently, an individual psychological approach has been developed which takes into account person-environment interactions (Xanthopoulou, Bakker, Demerouti & Schaufeli, 2007). Therefore, personal resources (e.g. resilience) have been integrated into the model in a number of ways alongside traditional job resources, such as, job control (Schaufeli & Taris, 2014).

In the past, CBT based interventions, which encourage people to develop cognitive resources have been effectively applied in the reduction of workplace distress (see Brunero, Cowan and Fairbrother, 2008). More recently, the construct of psychological flexibility has been considered as a potential resource in the workplace environment. Psychological flexibility is a broad concept, with components of the term embedded within a range of theoretical approaches. For example, non-judgemental acceptance within Compassion Focused Therapy (Gilbert, 2009) and self as context within Schema Therapy approaches (Young, Klosko, & Weishaar, 2003). A large research focus considering the concept has been developed within the Acceptance and Commitment Therapy (ACT) literature where psychological flexibility is defined as ‘the ability to contact the present moment more fully as a

conscious human being, and to either change or persist when doing so serves valued ends' (Hayes et al., 2004, p. 5). It refers to an ability to behave according to the requirements of long term values, rather than on the basis of private internal events, such as, thoughts, feelings and memories that emerge in situational contexts. When considering psychological flexibility in a workplace context, the ACT based definition highlights the importance of professional values to guide behaviour, which in FMH settings may differ according to the professional identity and experiences of staff across the workforce.

Psychological flexibility has been shown to correlate with and predict a range of work based outcomes, including: job performance, mental health, capacity to learn new skills at work, and absence rates (Bond, Hayes, & Barnes-Holmes 2006). This was true even when other factors linked to work related outcomes, such as, negative affectivity, locus of control and emotional intelligence, were controlled for. Flaxman and Bond (2010) have also demonstrated using a small sample RCT study that using an ACT based intervention to increase psychological flexibility was effective at reducing job distress. However, the findings were limited to those starting treatment with measured high levels of stress, and suffered from high rates of attrition at follow up, therefore, further studies are required in this area.

Evidence suggests that people who are more psychologically flexible are more able to accept demanding psychological experiences and act in a manner consistent with their values (Bond et al., 2011). Given the unique psychological demands identified for high secure FMH care professionals, it appears that examining psychological flexibility may offer some insight into staff experiences at work. It is possible that those with greater psychological flexibility would be able to focus less on their internal events (such as negative beliefs about safety, and negative attitudes towards aggression) and instead act upon their professional values which may be protective of wellbeing. For this reason, the predictive impact of psychological flexibility on staff wellbeing was considered.

3.3.3 Summary

In contrast to the highly evolved body of knowledge around job demands and resources in general occupations, the impact of job demands and resources on the wellbeing of high secure FMH clinicians is unknown. It is recognised that the high secure FMH setting is an exceptional work environment with a unique set of

psychological demands related to staff exposure to violence and aggression. At present, the theoretical basis for interventions to improve wellbeing for forensic professionals remains unclear. Therefore, this study aimed to develop an explorative analysis of the predictive ability of job demands related to violence and aggression, and two types of job resources (cognitive and contextual behavioural), on a range of wellbeing outcomes for staff working in high secure FMH care.

3.4 Methodology

3.4.1 Setting

The State Hospital is a high secure psychiatric hospital providing care for male patients (n=140) with dangerous, violent or criminal propensities and most commonly a primary diagnosis is schizophrenia (The State Hospital, 2015).

3.4.2 Procedure

The study used a cross-sectional design. It was approved by the State Hospital Research Committee and The University of Edinburgh, School of Health in Social Science Research Ethics Board (see appendix 2, 3a & 3b). All hospital staff with direct patient contact (n=402) were asked to voluntarily submit an anonymous questionnaire online or on paper. Study details were provided to staff via emails, posters, briefings and an information stall. Participants provided demographic information and completed seven self-report questionnaires.

3.4.3 Measures

Perceptions of the Prevalence of Aggression Scale (POPAS; Oud, 2001).

Using the 18-item POPAS questionnaire participants indicated the frequency during the past year of 16 categories of patient aggression (e.g. verbal aggression and mild physical aggression) on a 5-point Likert (never, 1, to frequently, 5). The two remaining items measured the number of incidents and days taken due to sick leave and leave resulting from violence and aggression during the preceding year. The measure has been validated in samples of UK psychiatric nurses (Nijman, Bowers, Oud & Jansen 2005) and has demonstrated good internal consistency ($\alpha=.83$, Brown, Loh & Marsh, 2012). In the current study the scale had excellent internal consistency ($\alpha=.93$).

Job Safety (Workplace Safety Scale (WSS); Hayes, Perander, Smecko, & Trask, 1998)

The WSS is a 50-item questionnaire used to assess employees' perceptions of work safety in five domains: (a) job safety, (b) co-worker safety, (c) supervisor safety, (d) management safety practices, and (e) satisfaction with the safety program. Using the 10 item job safety subscale participants rated their agreement to statements which described their role (e.g. "dangerous" and "scary") on a 5 point Likert scale ranging from strongly disagree (1) to strongly agree (5). The scale showed good validity across three independent samples and had high internal consistency ($\alpha = .88-.92$), Hayes et al., 1998), and excellent internal consistency in the current sample ($\alpha = .91$).

Attitude Towards Aggression Scale (ATAS; Jansen et al., 2006)

The 18-item ATAS questionnaire assessed five attitudinal subscales of inpatient aggression. There were three negative attitudes 'aggression is': 'offensive' (unpleasant, and unacceptable); 'destructive' (a threat or act of physical harm or violence); 'intrusive' (the expression of the intention to harm others). Two were more tolerant attitudes, 'aggression is': 'communicative' (a communicative signal), 'protective' (a protection of physical and emotional space). Participants rated their agreement using a 5-point Likert scale ranging from: totally agree (5), to, totally disagree (1). The scale has proven validity and acceptable reliability ($\alpha = .60 - .86$) for use with psychiatric health professionals (Jansen et al., 2005; Jansen et al., 2006). In the current sample four scales had acceptable reliability ($\alpha = .642 - .795$). The protective scale was in the borderline range ($\alpha = .591$).

The Work Related Acceptance and Action Questionnaire (WAAQ; Bond, Lloyd & Guenole, 2012)

The 7 items of the WAAQ measure workplace psychological flexibility. Participants respond to items (e.g. 'I am able to work effectively in spite of any personal worries that I have') using a 7-point Likert scale from, never true (1), to, always true (7). The WAAQ has good content validity and reliability ($\alpha = .83$; Bond et al., 2012). It was chosen over non-work specific measures of psychological flexibility due to superior associations with work-related outcomes (Bond et al., 2013). The WAAQ showed good reliability ($\alpha = .89$) in the current sample.

Professional Quality of Life Scale (ProQOL; Stamm, 2009)

The ProQOL comprises 30 questions with 3 discrete psychometric scales. Compassion satisfaction measure the amount of pleasure gained from doing work well; secondary traumatic stress describes work-related trauma and fear; burnout describes feelings of hopelessness, exhaustion and difficulties in working effectively. Participants rated questions on a 5-point Likert scale from never (1) to very often (5), while considering the frequency of their experience at work during the preceding 30 days. The ProQOL sub-scales have shown to have good reliability; compassion satisfaction ($\alpha = .88$), burnout, ($\alpha = .75$) and secondary traumatic stress ($\alpha = .81$; Stamm, 2009). This was replicated in the current study ($\alpha=.92$; $\alpha=.76$; $\alpha=.82$ respectively).

Kessler Psychological Distress Scale (K6; Kessler et al., 2002)

The K6 is a widely used short form screening tool that measures poor mental health. Participants rated 6 items (e.g. 'that everything was hopeless') based on the frequency of their experience in the last 4 weeks using a 5 point Likert scale from none of the time (1), to all of the time (4). The K6 has demonstrated excellent internal consistency ($\alpha = .89$; Kessler et al., 2002). It has been tested in population studies of mental health ($n = 10641$), and was found to be significantly better at screening for DSM-IV mood and anxiety disorders than alternative questionnaires (Furukawa, Kessler, Slade, & Andrews, 2003). In the current sample the K6 had excellent reliability ($\alpha =.90$).

Turnover Intent (Kelloway, Gottlieb & Barham, 1999)

Participants' agreement with 4 items (e.g. 'I am thinking about leaving this organisation') were rated on a 5 point Likert scale from strongly disagree (1) to strongly agree (5). The measure was chosen as a valid and reliable ($\alpha =.92 - .93$; Kelloway et al., 1999) measure of turnover intent which has successfully been applied with samples of nursing staff (Leiter & Maslach, 2009) and had good reliability in the current sample ($\alpha=.93$). It was recognised that staff within the current sample received additional payment rewards and may have found it difficult gain alternative employment on an equivalent benefits package. For this reason, an additional item was included to add specificity to questions of a psychological desire for turnover, which may not be acted upon in practice: 'I would like to leave my role

if I was able to maintain my current package of pay and benefits (including overtime availability / clinical and environmental allowance payments) in a role out-with secure forensic mental health services.’ The scale maintained excellent levels of internal reliability with the addition of this item ($\alpha=.92$). However, the items were analysed separately.

3.4.4 Analysis

A priori sample size calculations suggested that a minimum sample requirement of 135 to detect a medium size effect (0.15) when completing regression analysis using 14 predictor variables (Soper, 2016). Data was screened, including missing data analysis, descriptive statistics and normality checks. The main body of statistical analyses was conducted using multiple hierarchical regression models with bias-corrected bootstrapping (Field, 2013).

3.5 Results

3.5.1 Participants

Participants (n=142, 35% of eligible staff) were trained mental health nurses (46%, n=65); nursing assistants (19%, n=27); psychological services staff (11%, n=16); patient activity centre staff (4%, n=6); allied health professionals (4%, n=6); medics (4%, n=5), and other roles (10.6%). When compared to the proportion of the workforce made up by each staffing group the sample was found be broadly representative of the hospital workforce. Most identified as White British or White Scottish (94.4%, n=134); 47% (n=67) were male, 49% (n=70) female and 4% (n=5) did not specify. The mode age of respondents was 46-55 years old (40%, n=57), and the mode length of service at the hospital was 16 or more years (44%, n=62). Most staff (83%, n=118) were fully trained in the prevention and management of violence and aggression.

3.5.2 Job demands and resources

Table 1 provides an overview of all job demand and resources variables. The majority of participants (54%, n=75) described their role as safe, however, more participants agreed that their role was risky (71%, n= 98), dangerous (60%, n=85) and that they could easily get hurt (55%, n= 77). A relatively large proportion (29%, n= 40) also believed that there was a chance of death associated with their role (see

appendix 4 table 4a for details). The violent and aggressive events perceived to occur with most frequency were verbal aggression, passive aggression and threatening verbal aggression. Those perceived to occur least frequently were sexual assaults, successful suicides and suicide attempts (see appendix 4, table 4b). Mean scores for attitudes towards aggression domains (table 1) cannot be directly compared as each has a different number of items (see appendix 4, table 4c for a breakdown of individual scores).

Table 1: Mean and standard deviation for job demands and job resources.

	Mean	SD
Work Safety (n=142)	30.68	7.92
Total POPAS (n=142)	32.61	11.06
Aggression Offensive (n=135)	24.35	5.06
ATAS Destructive (n=140)	10.60	2.55
ATAS Intrusive (n=138)	9.18	2.34
ATAS Communicative (n=136)	7.82	2.40
ATAS Protective (n=140)	5.61	1.72
Psychological Flexibility (n=141)	36.51	6.72

Table 2 presents wellbeing outcomes. A small number of participants had concerning wellbeing scores, 7% (n=9) had low compassion satisfaction, 0.7 % (n=1) high burnout and 0.7% (n=1) high secondary traumatic stress. Twenty three per cent (n=31) of participants scored above the clinical cut-off for psychological distress, 18% (n= 25) within the mild to moderate range and 4% (n=6) within the range of a severe mental health disorder. Over half of participants had taken sick leave in the preceding year, mostly one (26%, n=37) or two (15%, n=21) occasions. Ten per cent of participants (n=14) had taken over 40 days' sick leave, with 200 days the highest reported. The number of participants absent from work following violence and aggression in the preceding year was low. The number of days lost ranged from 1 to 130. For turnover intentions, agreement was strongest with the additional question,

which rated turnover desire independent of financial concerns above the four item validated turnover intention scale (see appendix 4 table 4d).

Table 2: Wellbeing Outcomes n (%)

PROQOL	Low	Average	High
Compassion	9 (6.7)	109(80.7)	17 (12.6)
Satisfaction (n=135)			
Burnout (n=132)	59 (44.7)	72 (54.5)	1 (0.8)
Secondary	103 (74.6)	34 (24.7)	1 (0.7)
Traumatic Stress (n=138)			
	Normal	Mild to Moderate	Severe
Psychological	106 (77.4)	25 (18.2)	6 (4.4)
Distress (n= 137)			
	Yes	No	Average Day
Sick leave (n=140)	75(53.6)	65 (46.4)	11.16
Leave due to	12 (8.6)	128 (91.4)	1.83
Violence & Aggression (n=140)			

3.5.3 Correlations

Bivariate correlations between predictor variables and wellbeing outcomes are provided in table 3. Number of sick days and turnover intention scores had no correlations with predictors and were excluded from further analysis. However, 8 predictors were significantly correlated with turnover desire captured using the additional turnover question. This suggested the items measured separate constructs, with scores on the turnover intention scale likely confounded by financial implications. For this reason turnover desire was analysed separately and retained for further analysis.

Significant correlations between demographic and role variables with wellbeing were mixed and the strength of relationships tended to be small. Correlations tended to be in the direction expected. Only three variables were correlated with improved

wellbeing across each of the five measures; POPAS was weakly correlated ($r = -.290$ to $.307$) to improved wellbeing; psychological flexibility moderately correlated ($r = -.441$ to 3.73) to improved wellbeing; and beliefs that the job was unsafe showed the strongest correlations across wellbeing variables ($r = -.428$ to $.545$). Correlations between attitudes towards aggression and wellbeing were inconsistent. For negative attitudes, offensive attitudes were moderately related to reduced compassion satisfaction ($r = -.310$) and weakly related to increased turnover desire ($r = .171$). Intrusive attitudes showed a small correlation to reduced compassion satisfaction ($r = -.291$) and increased burnout ($r = .188$). Destructive attitudes showed no correlations. Positive attitudes towards aggression showed only one small correlation to wellbeing, between protective attitudes and increased compassion satisfaction ($r = .206$).

Table 3: Bivariate correlations between predictor variable and wellbeing outcomes (with bias corrected bootstrapped 95% confidence intervals)

	Compassion Satisfaction	Burnout	Secondary Traumatic Stress	Psych Distress	Sick days	Turnover Intention	Turnover desire
Sex	-.306** (-.444, -.162)	.237** (0.82, .393)	.144 (-.028, .304)	.234** (.083, .370)	.027 (-.123, .191)	.067 (-.103, .236)	.046 (-.123, .224)
Relation-ship	-.056 (-.235, .125)	-.013 (-.215, .190)	.036 (-.191, .251)	-.096 (-.285, .088)	.020 (-.195, .225)	.139 (-.013, .277)	.170* (.015, .320)
Age	-.137 (-.272, -.002)	.181* (.061, .301)	.073 (-.058, .199)	.034 (-.125, .181)	.112 (.012, .185)	.108 (-.039, .248)	.209* (.070, .353)
Role	-.301** (-.428, -.162)	.167* (.025, .302)	.167* (.033, .288)	.074 (-.071, .204)	.031 (-.159, .224)	-.010 (-.177, .170)	.180* (.002, .342)
Years' Experience	-.288** (-.415, -.163)	.264** (.158, .383)	.034 (-.091, .151)	.037 (-.137, .181)	.129 (-.008, .223)	.147 (.000, .290)	.320** (.198, .439)
Contact %	-.138 (-.262, -.007)	.111 (-.50, .262)	.055 (-.092, .196)	-.032 (-.196, .119)	.130 (.034, .202)	-.102 (-.279, .085)	.126 (-.029, .290)
POPAS	-.290** (-.407, -.169)	.285** (.154, .421)	.226** (.079, .356)	.249** (.069, .405)	.087 (-.16, .184)	.052 (-.121, .238)	.307** (.138, .470)
Job unsafe	-.428** (-.572, -.259)	.545** (.400, .655)	.459** (.286, .598)	.457** (.309, .586)	.142 (-.035, .294)	.165 (.011, .320)	.316** (.178, .451)
ATAS offensive	-.310** (-.471, -.147)	.126 (-.056, .334)	-.004 (-.203, 2.14)	.029 (-.151, .230)	.014 (-.165, .211)	-.055 (-.219, .128)	.171* (.003, .344)
ATAS Destructive	-.136 (-.314, .038)	.035 (-.157, .238)	-.019 (-.199, .178)	.003 (-.175, .205)	-.078 (-.244, .156)	-.073 (-.247, .112)	.091 (-.073, .257)
ATAS Intrusive	-.291** (-.432, -.133)	.188* (.027, .340)	.126 (-.055, .302)	.164 (-.027, .328)	.069 (-.106, .224)	.037 (-.037, .178)	.151 (-.004, .294)
ATAS Communicative	.094 (-.067, .254)	.037 (-.140, .213)	.087 (-.104, .281)	-.012 (-.219, .172)	.119 (-.017, .262)	.032 (-.121, .188)	.058 (-.101, .215)
ATAS Protective	.206* (.049, .366)	-.125 (-.286, .040)	-.049 (-.219, .141)	-.039 (-.226, .144)	.129 (-.101, .310)	.017 (-.155, .173)	-.071 (-.247, .091)
Psych. Flex.	.373** (.221, .507)	-.441** (-.568, -.282)	-.382** (-.535, .204)	-.438** (-.593, -.258)	-.091 (-.232, .125)	-.152 (-.343, .028)	-.202* (-.367, -.025)

Bold text = Statistically significant correlations, * $p > .05$, ** $p > .01$

3.5.4 Regression

Table 4 shows the extent to which predictor variables contributed to the variance in psychological wellbeing in a series of 5 forced entry method hierarchical multiple regressions with five wellbeing dependent variables. Demographic variables of age, gender and relationship were entered in block 1; job role variables of role, length of experience, percentage patient contact time, were entered in block 2; perceptions of the prevalence of violence, safety beliefs, and negative attitudes towards aggression were entered in block 3; positive attitudes towards aggression were entered in block 4; psychological flexibility was entered in block 5. R^2 change values for each block in the five models are provided in table 4.

Compassion Satisfaction (CS)

The regression model accounted for a total of 40% variance in CS with a decreased belief that the job was unsafe ($\beta = -.25$), and greater psychological flexibility ($\beta = .13$) being the only significant predictors of increased CS.

Burnout (BO)

The regression model accounted for a total of 47% variance in burnout (BO), with having longer length of service ($\beta = .17$), a greater belief that the job is unsafe ($\beta = .52$) and lower psychological flexibility ($\beta = -.40$), being the only significant predictors of increased BO.

Secondary Traumatic Stress (STS)

The regression model accounted for a total of 34% variance in STS, with a greater belief that the job is unsafe ($\beta = .51$) and less psychological flexibility ($\beta = -.33$) being the only significant predictors of increased STS.

Psychological Distress (PD)

The regression model accounted for a total of 45% variance in PD, with having less than 50% patient contact ($\beta = -.20$), a greater belief that the job is unsafe ($\beta = .49$) and a lower score for psychological flexibility ($\beta = -.37$) being the only significant predictors of increased PD.

Turnover Desire (TD)

The regression model accounted for a total of 20% variance in TD, with being in a relationship ($\beta = .18$), having worked in the hospital 6 years or more ($\beta = .26$), having a greater experience of violence and aggression ($\beta = .23$) and a lower score in psychological flexibility ($\beta = -.20$) being the only significant predictors of increased TD.

Table 4: Hierarchical multiple regressions. Dependant variables: Compassion Satisfaction, Burnout, Secondary Traumatic stress, Psychological Distress, and Turnover Desire.

		Compassion Satisfaction				Burnout				Secondary Traumatic Stress				Psychological Distress				Turnover Desire			
		B	SE B	B	P	B	SE B	β	p	B	SE B	β	P	B	SE B	β	P	B	SE B	β	p
1	(constant)	33.38 (22.63,42.59)	5.217		.001	25.53 (19.36, 32.66)	3.30		.001	21.45 (14.04, 28.60)	3.73		.001	14.10 (8.55, 19.64)	3.05		.001	1.10 (-1.41, 3.63)	1.24		.384
	Sex	-1.16 (-3.31,1.02)	1.080	-.09	.274	-.06 (-1.41, 1.25)	.69	-.01	.937	-.51 (-2.07, 1.04)	.82	-.05	.551	.63 (-.54, 1.66)	.60	.07	.301	-.42 (-.93, .11)	.27	-.13	.133
	Rel.	-.66 (-3.22, 1.90)	1.272	-.04	.621	-.13 (-1.93, 1.50)	.95	-.01	.892	.97 (-1.29, 3.01)	1.18	.08	.416	-.84 (-2.44, .87)	.80	-.08	.347	.68 (.08, 1.17)	.29	.18	.031
	Age	-.04 (-2.73, 2.35)	1.351	-.003	.970	.90 (-.92, 2.81)	.96	.07	.357	1.40 (-1.05, 4.24)	1.31	.11	.290	.74 (-.80, 2.06)	.73	.07	.310	.18 (-.61, .95)	.40	.05	.652
2	Role	-1.09 (-3.72, 1.60)	1.296	-.08	.378	-1.47 (-3.51, .52)	.93	-.13	.117	1.31 (-.60, 3.37)	1.01	.11	.185	-.51 (-2.04, .89)	.82	-.06	.534	-.32 (-1.09, .40)	.37	-.09	.374
	Exp.	-2.00 (-5.44, 1.22)	1.766	-.13	.263	2.07 (.13, 3.95)	.97	.17	.035	-1.75 (-4.47, .68)	1.32	-.14	.178	-.73 (-2.62, 1.23)	.96	-.07	.448	.96 (.19, 1.76)	.41	.26	.017
	% contact	2.02 (-.37, 4.35)	1.394	.12	.149	-1.40 (-3.56, .63)	1.05	-.10	.185	-1.89 (-4.04, .38)	1.09	-.14	.094	-2.20 (-3.94, -.60)	.87	-.20	.011	-.32 (-1.02, .41)	.34	-.08	.339
3	POPAS	-.03 (-.14, .07)	.054	-.05	.591	.03 (-.04, .10)	.04	.07	.373	.02 (-.08, .11)	.05	.03	.766	.05 (-.02, .12)	.04	.13	.191	.03 (.01, .06)	.02	.23	.027
	Offensive	-.13 (-.39, .16)	.139	-.09	.364	-.06 (-.29, .16)	.10	-.06	.527	-.19 (-.42, .04)	.11	-.17	.100	-.13 (-.31, .02)	.08	-.15	.108	.02 (-.05, .09)	.04	.06	.557
	Destructive	.046 (-.39, .50)	.213	.02	.839	-.08 (-.40, .21)	.18	-.04	.665	-.08 (-.43, .23)	.18	-.04	.655	-.06 (-.34, .21)	.14	-.04	.676	-.02 (-.12, .09)	.05	-.03	.676
	Intrusive	-4.07 (-.90, .11)	.276	-.14	.148	.16 (-.25, .57)	.19	.07	.407	.22 (-.23, .71)	.22	.09	.333	.25 (-.08, .68)	.18	.13	.186	-.00 (-.13, .13)	.07	-.00	.970
	Unsafe	-.215 (-.39, -.03)	.084	-.25	.012	.36 (.22, .49)	.07	.52	.001	.35 (.17, .52)	.08	.51	.001	.27 (.14, .41)	.06	.49	.002	.04 (-.00, .07)	.02	.19	.062
4	Communicative	.214 (-.30, .75)	.256	.07	.422	.02 (-.28, .29)	.17	.01	.920	-.01 (-.49, .40)	.23	-.01	.959	-.28 (-.56, -.02)	.15	-.15	.074	.09 (-.03, .19)	.06	.13	.132
	Protective	.353 (-.33, 1.00)	.336	.09	.314	-.20 (-.79, .38)	.25	-.06	.417	.05 (-.52, .67)	.28	.02	.872	.15 (-.34, .59)	.23	.06	.504	-.07 (-.25, .11)	.09	-.08	.435
5	Psych. Flexi	.342 (.18, .51)	.083	.34	.001	-.32 (-.43, -.23)	.06	-.40	.001	-.27 (-.40, -.14)	.07	-.33	.001	-.24 (-.33, -.14)	.05	-.37	.001	-.05 (-.09, -.01)	.02	-.20	.028
		Step 1 R2= 0.10 F(3,138) =5.16 P=.002 Step 2 ΔR2= .07 F(3,135)=3.89 P=.011 Step 3 ΔR2= .12 F(5,130)=4.16 P=.002 Step 4 ΔR2= .02 F(2,128)=1.64, P=.199 Step 5 ΔR2= 0.11, F(1,127)=23.23, P=.000				Step 1 R2= .078, F(3, 138)=3.92, p=.010 Step 2 ΔR2= .03, F(3, 135)=1.53, p=.209 Step 3 ΔR2= .25, F(5, 130)= 10.22, p=.000 Step 4 ΔR2= .01, F(2,128) =.46 p=.631 Step 5 ΔR2= .14 F(1,127)=37.31, p=.000				Step 1 R2= .02 F(3,138)=1.09, p=.354 Step 2 ΔR2 = .03 F(3,135)=1.41, p=.242 Step 3 ΔR2 = .24 F(5,130)=8.56, p=.000 Step 4 ΔR2 = .00 F(2,128)=.002, p=.998 Step 5 ΔR2 = .10 F(1,127)=21.21, p=.000				Step 1 R2= .07 F(3,138)=3.22, p=.025 Step 2 ΔR2= .01 F(3,135)=.30, p=.828 Step 3 ΔR2= .25 F(5,130)= 9.42 p=.000 Step 4 ΔR2=.02 F(2,128)= 1.66 p=.195 Step 5 ΔR2= .13 F(1,127)= 29.66 p=.000				Step 1 R2= .06 F(3,138)=2.78 p=.044 Step 2 ΔR2= 0.7 f(3,135)=3.47 p=.018 Step 3 ΔR2= .10 F(5,130)=3.48 p=.005 Step 4 ΔR2= .01 F(2,128)=1.14 p=.323 Step 5 ΔR2= .04 F(1,127)=6.77 p=.010			

Note: Bias corrected bootstrapping was undertaken creating 1000 cases per wellbeing outcome. β values were taken from model prior to bootstrapping. Demographic and role variables: age, young <35 years old (0) or older >36 years old (1); sex, male (0) or female (1); and relationship status, no relationship (0) or in a relationship (1); role, nurse (0) or non-nurse (1); patient contact time, 1-49% (0) or 50-100% (1); length of experience short service ≤ 5 years (0); long service ≥ 6 years (1)

3.6 Discussion

The primary aim of this study was to identify the role of job demands related to violence and aggression and two types of psychological resources (cognitive and contextual behavioural) on predicting wellbeing outcomes for employees working in a high secure FMH setting. The findings suggest that one psychological job demand (the belief that the job is unsafe) and one psychological resources, psychological flexibility, were the greatest predictors of staff wellbeing. Interestingly, despite the focus on the high rates of violence and aggression in forensic psychiatric settings, the prevalence of violent and aggressive incidents in this sample only added to the prediction of one variable: turnover desire. Also, the attitudes staff held towards violence and aggression (both positive and negative) were unable to predict wellbeing in this sample. This finding goes against the previous small sample research which suggested a link between tolerant attitudes and improved wellbeing for nurses (Whittington, 2002). This may have implications for cognitive interventions aimed at improving wellbeing, as holding more tolerant cognitions towards aggression was not related to improved wellbeing. However, the contextual behavioural resource, psychological flexibility was a significant predictor across all wellbeing outcomes, even when all other variables were accounted for. This finding suggests that psychological flexibility may play an important role in buffering key wellbeing outcomes in this population. Overall, the findings suggest that job demands related to beliefs about safety, and contextual behavioural psychological resources were associated with staff wellbeing.

3.6.1 Violence and aggression

Given that previous research suggests that managing violent patients is stressful, unrewarding (Mason et al., 2008) and linked to reduced wellbeing for hospital staff (Whittington, Shuttleworth, & Hill, 1996) it was surprising that self-reported exposure to violence and aggression only added to the prediction of turnover desire in the current sample. The reason for the limited findings in this area could be due to differences between samples of general nursing staff studied by Whittington et al., (1996) and those in forensic settings. Exposure to violence is identified as more commonplace in specialised forensic services and it is possible that this leads to acclimatisation and reduces the negative impact of violent events (Jonker et al., 2008). In the current sample, the majority of staff were fully trained in management

of violence and aggression. It is possible that this training in some way reduced the burden of dealing with challenging incidents, as found previously by Martin and Daffern (2006). However, this hypothesis was not tested.

3.6.2 Safety

Given that clinicians' beliefs about safety were predictive of wellbeing it appears that the relationship between violence and aggression, and wellbeing may not be direct but instead mediated by staff's psychological appraisals. As safety is identified as a primary human need (Maslow, 1954; Tay & Diener, 2011), it is not surprising that beliefs about job safety were found to be a consistent predictor of wellbeing. This finding adds to historic research linking beliefs about safety to wellbeing in general occupational samples (Guastello, 1992) and research which suggests that nurses' experience increased stress when working with patients with whom they felt afraid (Jones et al., 1987). Similar to previous research (Martin & Daffern, 2006) most participants in this study agreed that the hospital was safe; however, they also largely believed that their job was risky, dangerous and that they could easily get hurt. This highlighted an interesting paradox which appears to have been missed by earlier studies that used a single safety question design (such as Martin & Daffern, 2006).

The safety paradox suggests that FMH clinicians may experience cognitive dissonance (Festinger, 1957) related to mixed assessments of workplace safety. There are a number of possible explanations for this. Firstly, FMH clinician's views about safety may be linked to the competing demands of FMH care, between risk management, with a focus on restrictions, staff control and avoiding harm; and a recovery-orientation, which focuses on positive risk taking and developing patient's autonomy (Boardman & Roberts, 2014). Secondly, differences in FMH clinician's locus of control may alter their assessment of safety. The presence of security measures, such as having keys to locked areas, control of restricted items and training in the management of violence and aggression, may allow clinicians to hold an internal locus of control, and to have confidence that they can influence and control their environment. However, at times FMH clinician's may believe that the behaviour of patients with serious mental health problems is beyond their direct control, leading to an external locus of control in which the environment appears risky. This may be especially problematic for clinicians in high secure settings given their knowledge of the serious nature of patient's previous offences and media

exposure which often portrays high secure patients in a negative and risk focused manner.

The finding about safety beliefs enhances current understanding of violence and aggression in the high secure FMH setting by drawing attention to the psychological processes involved. Important clinical implications for those working in high secure FMH care may also stem from this finding, as previous research has linked clinicians beliefs that they are unsafe to difficulties in therapeutic practice and patient care (Carlsson, Dahlberg, Lützen, & Nystrom 2004; Poster, 1996; Secker et al. 2004). Therefore, further research in this area is required and to benefit both patients and staff.

3.6.3 Psychological Flexibility

The current findings add support to the contextual behavioural understanding that wellbeing is not influenced not by the form of thoughts (that is, whether they are positive or negative), but by the way in which people relate to their internal experiences, through psychological flexibility (Flaxman et al., 2013). This is consistent with previous research which has identified psychological flexibility as a leading predictor of workplace wellbeing over emotional control methods (Donaldson-Feilder & Bond, 2004). It is recognised that in demanding work contexts, such as high secure FMH settings, staff are often required to tolerate emotionally challenging content and behaviour. The current findings suggest that psychological flexibility may play a unique and significant role in the relationship between such emotional work demands and wellbeing. This theme is supported by Biron and van Veldhoven (2012) who identified that psychological flexibility protected workers against workplace emotional demands, whereas, attempts at emotional control increased exhaustion. It appears that clinicians with greater psychological flexibility may be more able to accommodate the difficult feelings that arise from job demands and maintain their focus on the pursuit of valued behaviour. It is hypothesised that this process improves wellbeing in two ways, directly, through reducing the distress associated with managing unwanted cognitive content, and indirectly, through increasing satisfaction by goal attainment (Donaldson-Feilder & Bond, 2004). Therefore, rather than expending effort on affect regulation which may depletes resources and wellbeing, psychological flexibility may have a protective effect upon FMH professional wellbeing (Biron & van Veldhoven, 2012; Flaxman et

al., 2013; Hobfoll, 2002). This finding is worthy of further investigation, given that the current design could not account for causation.

To our knowledge, this is the first study to consider the relationship between psychological flexibility and wellbeing within a UK high secure FMH setting. The results add to the growing literature that highlights significant relationships between psychological flexibility and employee wellbeing in a range of caring professions, including: rehabilitation workers (McCracken & Yang, 2008); paramedics (Mitmansgruber, Beck & Schüssler, 2008); and addiction counsellors (Vilardaga et al., 2011). The findings are also in line with longitudinal results of workplace ACT interventions (Bond & Bunce, 2000; 2003) which suggest that this emerging approach to occupational wellbeing management would benefit further research effort within FMH settings.

3.6.4 Demographic factors

It was noteworthy that certain demographic factors were significantly predictive of wellbeing. Overall, it seems working in this environment for a long time was predictive of burnout and desire to leave. This is supported by previous research that suggests that as length of service increases burnout risk increases (Stanetić & Tešanović, 2013) and employee engagement falls (Robinson, Perryman, & Hayday, 2004). It was also interesting to see that time spent in direct contact with patients predicted reduced psychological distress in this sample, this is in line with findings that clinicians can feel frustrated by aspects of their work unrelated to their core caring role, such as administrative tasks and managing enquiries (Maben, Latter & Clark, 2006). It may be that for clinicians spending more time on the care-centred aspect of their role could alleviate psychological distress.

3.6.5 Turnover intention and sick days

It was interesting to find that turnover intention and sick days showed no relationship to any of the job demand or resource variables measured. For sickness, it is possible that this may be due to unaccounted for variables, such as physical health status, a primary cause of sickness absence (Office for National Statistics, 2014). For turnover intentions, it appeared that financial implications were important as, when they were removed greater correlations were found between turnover desire and wellbeing outcomes. It seems likely that a desire to leave, even without intent to act will

influence upon workplace engagement. Therefore, alongside measurements of intent to leave, future research may benefit from completing additional assessments of desire to leave which eliminate financial cofounders.

3.6.6 Clinical Implications

Although causality cannot be assessed in the present study, the findings do provide support for further research into the potential for a mechanism of change in wellbeing via a contextual behavioural based approach. The current findings did not provide strong support for change via the cognitive mechanisms measured, particularly attitudes towards aggression. However, beliefs about safety did appear to play an important role in predicting wellbeing and it is possible that these beliefs may be amenable to change via cognitive methods. An alternative approach is provided by ACT interventions, which have developed tailored programmes for employees in safety-critical industries (Flaxman, Bond & Livheim, 2013). Rather than focusing on the content of internal experiences, ACT aims to reduce distress by altering their function. Therefore, it is not viewed as problematic to hold opposing views, such as, feeling both safe and at risk, as long as the way a person relates to those experiences does not stop them from acting effectively in line with their values. As a novel therapeutic approach, ACT has proven effectiveness in broader occupational samples (Flaxman & Bond, 2010; Lloyd, Bond & Flaxman, 2013) and the current findings support further research into this mechanism of change for forensic professionals.

3.6.7 Strengths and considerations

It is recognised that demands and resources faced in the high secure FMH setting extend beyond those examined presently; however, by focusing on demands which make high secure FMH settings uniquely stressful, those related to violence and aggression, this study provides a useful starting point to encourage further work in this under-researched area. As an exploratory study in a highly specialised population at a single hospital site, the study may not be generalisable. The study had only a moderate response rate and used an opportunistic sampling method, therefore the characteristics of non-respondents are unknown and this may introduce bias into the findings. The use of self-report measures to assess outcomes, including, wellbeing, beliefs about safety, and exposure to violence and aggression, could also bias findings due to potential for over or under-reporting. Despite this, the study did

benefit from the inclusion of clinicians from a range of staff groups. Previous research into wellbeing and healthcare violence and aggression has focused primarily on nurses, therefore this study adds to the research base by considering the wellbeing of staff across the clinical workforce. It should also be noted that due to the large number of correlations completed the risk of type two errors might be inflated. As a cross-sectional study, the data was unable to explain causal relationships between variables. However, the study provides a useful starting point to consider possible mechanisms of wellbeing change for forensic professionals and it is hoped that these results can be used as a foundation for further longitudinal or intervention based studies to consider causality within these relationships.

3.7 Conclusion

To improve the wellbeing of staff working in high secure forensic settings it is necessary to understand the impact of psychological demands and resources upon wellbeing outcomes. This study is the first of its kind to use the JD-R model to account for various job demands and psychological resources in the high secure FMH workplace and to consider their relationship to wellbeing outcomes. The results suggests that it may be helpful to focus interventions on the psychological processes staff encounter in the workplace, particularly on contextual behavioural resources which were found to be predictive of wellbeing.

3.8 References

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Appendix 1: Example search strategy using OVID platform: PsycINFO

Search	
1	Nurs* or "nurs* assistant" or "care assistant" or "nurs* aides" or psychiatrist or psychologist or "health professional" or "care work*" or doctor or medic or "occupational therapist" or therapist or counsellor or "prison officer" or "correctional officer" or "detention officer" or "penal officer" or "correctional staff" or "detention staff" or "penal staff" or Staff or employe* or Worker* or personnel).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures]
2	(Intervention or training or "professional development" or supervision or therapy or relaxation or mindfulness or debrief or treatment or "stress management" or "employee support" or "personnel development").mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures]
3	("psychiatr* hospital" or "psychiatr* ward" or "psychiatr* Unit" or "psychiatr* facilit*OR "state Hospital" or Prison or "correctional facilit*" or "forensic secure" or "secure setting" or "secure hospital" or "secure unit" or "forensic mental" or "forensic psychiatr*" or "penal facilit*" or "detention facilit*" or correctional).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures]
4	(Morale or "job satisfaction" or workload or retention or wellbeing or well-being or "well being" or "compassion fatigue" or "secondary traumatic stress" or "compassion satisfaction" or burnout or turnover or absent\$ or absence or stress or exhaustion or empowerment or distress or depression or anxiety).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures]
5	1 AND 2 AND 3 AND 4
6	Limit 5 to English

Appendix 2: *PARTICIPANT INFORMATION SHEET*

Exploring safety beliefs, attitudes towards violence and aggression and wellbeing of people working in a high secure forensic hospital.

INVITATION

I am a Trainee Clinical Psychologist employed by The State Hospital and completing my Doctorate in Clinical Psychology at The University of Edinburgh. I am conducting research for my doctoral thesis.

You are being asked to take part in a research study to investigate the wellbeing of individuals employed within The State Hospital. The research will consider the relationships between staff beliefs about safety and wellbeing, and attitudes towards violence and aggression and wellbeing. The research will also look at psychological flexibility and consider if this has a role in understanding the relationship between these factors and wellbeing outcomes.

WHAT WILL HAPPEN

In this study, you will be asked to complete a questionnaire. Questionnaires can be accessed online through the link provided and submitted confidentially electronically. Paper copies of the questionnaire are also available. All paper copies are accompanied by a sealable envelope for the confidential return of the questionnaire via the internal mail.

The questionnaire will ask for some demographic information, such as our occupational group and length of service. You will then be asked to answer questions about your beliefs about the safety of your workplace, your beliefs about violence and aggression and your experiences of violence and aggression at work. You will also be asked questions about your wellbeing.

TIME COMMITMENT

The questionnaires will typically take 25 minutes to complete.

PARTICIPANTS' RIGHTS

You may decide to stop being a part of the research study at any time without explanation. You have the right to ask that any data you have supplied to that point be withdrawn/destroyed. You have the right to omit or refuse to answer or respond to any question that is asked of you. You have the right to have your questions about the procedures answered. If you have any questions as a result of reading this information sheet, you should ask the researcher before completing the questionnaire.

BENEFITS AND RISKS

There are no known benefits or risks for you in this study. As the study includes some questions about your experiences of violence and aggression in the workplace it is possible that some people may find these questions upsetting. If you feel upset about any of the questions in the study, you are not required to answer it. You can also seek support from the Employee Support Service using the links below:

<http://adsp02/Contacts/Pages/ConfidentialContactOfficers.aspx>

<http://adsp02/StaffGovernance/SafeWorkingEnvironment/2012/Pages/EmployeeAssistanceProgramme.aspx>

COST, REIMBURSEMENT AND COMPENSATION

Your participation in this study is voluntary.

CONFIDENTIALITY/ANONYMITY

The data we collect does not contain any personally identifiable information about, you except for your occupational role and demographic information. The data collected will be written up to meet the academic requirements for the University of Edinburgh Doctorate in Clinical Psychology and may be used in publications and presentations. Data will be used in an aggregated way so as to ensure that individual participants will not be identifiable.

FOR FURTHER INFORMATION

For further information about the study, please contact the researcher:

Amelia Cooper (Trainee Clinical Psychologist)

Amelia.cooper@nhs.net

The State Hospital Lampits Road, Carstairs Junction, Lanark, ML11 8RP

Tel:01555 840293

This research is being supervised by Dr Nuno Fe and Morag Slesser. They will be glad to answer your questions about this study at any time using the contact details provided below.

Clinical Supervisor: Morag Slesser (Head of Psychological Services)

Morag.slesser@nhs.netTel: 01555 840293

The State Hospital Lampits Road, Carstairs Junction, Lanark, ML11 8RP

Academic Supervisor: Nuno Ferreira (Lecturer in Clinical Psychology)

nuno.ferreira@ed.ac.ukTel: 0131 650 3898

University of Edinburgh, School of Health in Social Science, Teviot Place, Edinburgh, EH8 9AG.

If you would like to find out about the final results of this study, please contact the researcher to request further information.

Appendix 3a: The State Hospital management approval for research



Amelia Cooper
Trainee Psychologist
The State Hospital

Date 6 July 2015
Our Ref DA/ag
Your Ref
Enquiries to Ann Gallacher
Ext No 2221

Dear Ms Cooper

Re: An exploratory analysis of the relationship between staff safety beliefs, staff attitudes towards violence and aggression and the mediating effect of psychological flexibility, on the wellbeing of forensic mental health care professionals employed in a high secure hospital

Having considered the views of the Research Committee and noted that REC approval is not required, I write to give you Managerial Approval to proceed with your project. This is subject to you fulfilling the requirements of the State Hospital Research Committee.

May I take this opportunity to wish you every success in your endeavour.

Yours sincerely

A handwritten signature in black ink, appearing to read 'D Alcock', written over a light blue horizontal line.

Dr Duncan Alcock
Associate Medical Director

cc. Jamie Pitcairn, Research and Development Manager.
Professor Lindsay Thomson, Medical Director.

Appendix 3b: University of Edinburgh Research Ethics Approval Letter



SCHOOL OF HEALTH & SOCIAL SCIENCE
CLINICAL AND HEALTH PSYCHOLOGY

The University of Edinburgh
Medical School
Doorway 4, Teviot Place
Edinburgh EH8 9AG

Telephone: 0131 651 2989

Fax: 0131 650 2891

Email: k.gardner@ed.ac.uk

Amelia Cooper
Trainee Clinical Psychologist

02 September 2015

Dear Amelia,

Application for Level 1 Ethical Approval

Project Title: An exploratory analysis of the relationship between staff safety beliefs, staff attitudes towards violence and aggression and the mediating effect of psychological flexibility, on the wellbeing of forensic mental health care professionals employed in a high secure hospital.

Academic Supervisor: Nuno Ferreira

Thank you for submitting the above research project for review by the Department of Clinical and Health Psychology Ethics Research Panel. I can confirm that the submission has been independently reviewed and was approved on the 11th August 2015.

Should there be any change to the research protocol it is important that you alert us to this as this may necessitate further review.

Yours sincerely,

Kirsty Gardner
Administrator
Clinical Psychology

Appendix 4: Empirical Study Supplementary Tables

Table 4a: Job safety scores n(%)

Workplace safety Item	Strongly disagree	Disagree / Neither disagree	Agree nor Agree / strongly agree
Dangerous (n = 139)	23 (16.5%)	31 (22.3%)	85 (59.9%)
Safe (n=138)	30 (21.7%)	33 (23.9%)	75 (54.3%)
Hazardous(n=138)	25 (18.1%)	40 (29.0%)	73 (52.9%)
Risky (n=138)	13 (9.4%)	27 (19.6%)	98 (71.0%)
Unhealthy (n=138)	54 (39.1%)	38 (27.5%)	46 (33.3%)
Could easily get hurt (n=139)	28 (20.1%)	34 (24.5%)	77 (55.4%)
Unsafe (n=138)	71 (51.4%)	34 (24.6%)	33 (23.9%)
Fear for Health (n=139)	71 (51.1%)	31 (22.3%)	37 (26.6%)
Chance of death (n=139)	74 (53.2%)	25 (18%)	40 (28.8%)
Scary (n=138)	62 (44.9%)	40 (29.0%)	36 (26.1%)

Table 4b: Breakdown of Perception of the Prevalence of Aggression scores n(%)

POPAS Item	Never	Occasionally / sometimes	Often / frequently
1. Verbal Aggression (n=140)	13 (9.3)	60 (42.9)	67 (47.9)
2. Threatening Verbal Aggression (n=139)	46 (33.1)	57 (41)	41 (29.9)
3. Humiliating Aggressive Behaviour (n=138)	52 (37.7)	59 (42.8)	27 (19.6)
4. Provocative aggressive behaviour (n=139)	42 (30.2)	71 (51.1)	26 (18.7)
5. Passive Aggressive behaviour (n=137)	21 (15.3)	76 (55.5)	40 (29.2)
6. Aggressive splitting behaviour (n=138)	38 (27.5)	75 (54.3)	25 (18.1)
7. Threatening Physical aggression (n=140)	48 (34.3)	64 (45.7)	28 (20)
8. Destructive aggressive behaviour (n=140)	58 (41.4)	68 (48.6)	14 (10)
9. Mild Physical violence (n=138)	61 (44.2)	61 (44.2)	16 (11.6)
10. Severe physical violence (n=141)	113 (80.1)	24 (17)	4 (2.8)
11. Mild Violence against self (n=141)	46 (32.9)	71 (50.7)	23 (16.4)
12. Severe Violence against self (n=140)	93 (66.4)	41 (29.3)	6 (4.3)
13. Suicide attempts (n=140)	108 (77.1)	32 (22.9)	0
14. Successful suicides (n=139)	136 (97.8)	3 (2.2)	0
15. Sexual harassment / intimidation (n=140)	85 (60.7)	44 (31.4)	11 (7.9)
16. Sexual assault / rape (n=139)	138 (99.3)	1 (0.7)	0

Table 4c : attitudes towards aggression scoring breakdown

Domain	Aggression...	N	Mean	Std. Deviation
Offensive	is a non cooperative attitude	140	3.12	1.063
	is unpleasant and repulsive	137	3.45	1.071
	cannot be tolerated	139	3.71	1.023
	Is unnecessary and unacceptable behaviour	138	3.62	1.042
	In any form is always negative and unacceptable	138	3.37	1.108
	Is destructive behaviour and therefore unwarranted	139	3.60	.960
	Poisons the atmosphere on the ward and obstructs treatment	139	3.58	.970
Communicative	Is the start of a more positive nurse patient relationship	139	2.14	.967
	Offers new possibilities in nursing care	138	2.57	1.003
	Helps the nurse to see the patient form another point of view	139	3.08	1.117
Intrusive	Is an impulse to disturb and interfere in order to dominate or harm others	138	3.25	1.052
	Is a powerful, mistaken, non-adaptive, verbal and/or physical action done out of self-interest	137	3.06	1.006
	Is expressed deliberately with the exception of someone who is psychotic	139	2.89	1.033
Destructive	Is when a patient has feelings that will result in physical harm to self or others	139	3.18	1.137
	Is violent behaviour to self or others	139	3.68	1.000
	Is threatening to damage others or objects	139	3.73	.960
Protective	Is to protect oneself	136	2.93	1.030
	Is the protection of one's own territory and privacy	139	2.69	.999

Table 4d: Turnover intention and turnover desire score breakdown

		Strongly disagree	Neutral	Agree / strongly agree
Turnover intention scale	Thinking about leaving the organisation (n=138)	66 (47.8%)	24 (17.4%)	48 (34.8%)
	Planning to get a new job (n=137)	74 (54.0%)	23 (16.8%)	40 (29.2%)
	Planning to ask about new jobs (n=138)	71(51.4%)	26(19.0%)	41(29.7%)
	Not planning to stay in organisation much longer (n=138)	70(50.7%)	34 (24.6%)	34(24.6%)
Turnover Desire	I would like to leave my role if I was able to maintain my current package of pay and benefits (including overtime availability / clinical and environmental allowance payments) in a role out-with secure forensic mental health services (n=137)	63 (46.0%)	21 (15.3%)	53 (38.7%)

Appendix 5: Instructions for authors Journal of Forensic Psychiatry and Psychology

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