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Burnout, depression and job satisfaction in acute psychiatric and secure mental health settings.

By

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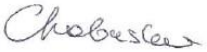
Signature  **Date** 13-05-2016

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I. Lay summary

The thesis presented here consists of two chapters:

Chapter 1 looked at all the relevant studies exploring the link between depression and feeling burnt-out for staff working in complex mental health services. This included those providing care to people suffering from serious mental illness and people with mental health problems who committed criminal offences. Overall, studies found that feeling emotionally exhausted was particularly relevant to depression. Two other aspects of being burnt-out had different relationships with depression.

Chapter 2 explores how work demands can relate to and predict being burnt-out, and how other factors like social support and other psychological factors (e.g. how interested and insightful people are) can explain the process of becoming burnt-out or how satisfied people are with their jobs. Chapter 2 looks at the specific work environment of secure mental health settings including services who care for service-users who committed offences and who may also have an intellectual disability. The key findings were that social support and some psychological factors such as psychological flexibility explained why people can become burnt out or why they remain satisfied with their jobs.

II. Thesis abstract

Chapter 1:

Objective: The systematic review aimed to review the literature

on burnout and its relationship to depression within the acute in-patient mental health services: psychiatric units and specifically, secure forensic mental health services.

Methods: The review process included a systematic search across five databases (Medline, PsychINFO, Cinahl Plus, EMBASE and SCOPUS). Eligible studies included a cross-sectional design, using validated measures on burnout and depression.

Results: A strong relationship between depression and emotional exhaustion was found. The relationship between depression and two other burnout dimensions (personal accomplishment, depersonalisation) was weaker and better explained in the context of other predicting (anxiety) and mediating (transformational leadership) variables. While depression severity across the studies was mostly mild with average burnout, service-specific variations were observed.

Chapter 2:

Objective: The empirical study aimed to explore any direct relationships of subjectively perceived understanding, predictability, control (job demands) with burnout and job satisfaction, and direct/in-direct effects of social support, psychological mindedness and psychological inflexibility (external and internal resources) on these relationships.

Methods: Data was collected among Scottish National Health Service (NHS) employees (n=198) working in secure mental health services; forensic (58.65%) or

intellectual disability (41.35%). Data gathered from the final sample of 141 nursing staff was analysed using t-tests, bi-variate correlations, hierarchical regressions and a series of mediation, moderation and moderated-mediation analyses.

Results: The empirical study revealed that individual burnout dimensions were predicted by different job demands. Social support appeared as predictor rather than a moderator of job satisfaction and emotional exhaustion while psychological inflexibility was a mediator for job demands and burnout.

Overall Conclusions: Concluding remarks for both, systematic review and empirical study, identify the need for further research, especially within the forensic mental health speciality. Both highlight that direct and in-direct effects may be important in explaining burnout while the empirical study makes further suggestion with regards to likely individualised pathways and two important resources of social support and psychological flexibility.

III. Acknowledgement

This work and most importantly, the journey there and beyond, would not matter or be complete without many people who synchronistically appeared in my life. As such, I would like to say a humble thank you to:

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Mr Farman Ali- a voice of reason with compassionate heart and a friend who became my family.

And finally, to all the events and people who, although not named, touched my life and taught me many valuable lessons of kindness, love and forgiveness.

Chapter 1: Systematic Review

1.1 Journal Article: Title Page

A Systematic Review: Burnout and Depression in Acute Psychiatric and Secure Mental Health Settings

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1.2 Abstract

BACKGROUND: This review is embedded within a larger conceptual and empirical debate across wide occupational settings about the distinction between depression and burnout. The variation in different research designs, methods, instruments and limited quality of the previous literature reviews, with questionable concordance with regards to levels of stress in acute mental health settings is of particular interest given demands associated with working there.

OBJECTIVE: The aim was to investigate associations between burnout and depression, and the nature of such relationships in acute in-patient psychiatric and secure mental health settings, and to review the findings in the context of the severity and prevalence of burnout and depression.

METHODS: A systematic review was conducted, searching across five databases.

RESULTS: Data from seven studies revealed the depression–emotional exhaustion relationship to be the strongest and most consistently reported. Depersonalisation and personal accomplishment relationships with depression were weaker and better explained in relation to transformational leadership or anxiety. The reported severity was mostly mild for depression and average for burnout with some service-specific variations. Studies were commonly limited in quality of their inclusion-exclusion criteria but presented strengths in their measurement of burnout.

CONCLUSIONS: Research on the burnout-depression relationship in in- patient, acute psychiatric and more so, forensic mental health settings, is limited in number and quality.

Key words: depression, burnout, review

1.3 Introduction

The European Agency for Safety and Health at Work [1]emphasizes the possibility for employees to experience burnout in the context of work- related stress while the 2015 Labour Force Survey [2] indicates a tenacious grip of stress and depression on the UK's workforce for the last ten years. In such context, the increased popularity of burnout research is not surprising. Even though the first recorded definition of burnout could be attributed to Freudenberger [3], the most established and commonly used definition is that by Maslach and colleagues [4, 5] identifying three factors; feeling drained of resources and energy (emotional exhaustion/ exhaustion), negative responses or attitudes towards service users and work (depersonalisation/cynicism), and a tendency to evaluate one's work as insufficient (lack of personal accomplishment/ efficacy).

The Maslach Burnout Inventory [4, 6] corresponding to three aforementioned burnout dimensions, is considered to be a ‘’gold standard’’ measure of burnout due to its validity and a world-wide utility [7, 8]. However, questions about the nature of burnout appear to remain. While some researchers emphasise the symptomatic components of a burnout *state,* others propose that it is a dynamic *process* which unfolds and changes over time. The proponents of a view that burnout should be perceived as a state, focus on cognitive, behavioural, emotional and physical manifestations [9]. The critics of this conceptualisation caution against favouring the clinical categorisation of burnout as a syndrome [10], which may contribute to ‘’diagnostic noise” [11] and may not encapsulate the complexity of this construct [12]. While this categorical approach may be of value when recognising the presence or absence of burnout [13], it does not account for why and how burnout levels change

over time [14].

Although a detailed discussion about why burnout develops is beyond the scope of this review, it must be acknowledged that there is a lack of consistent agreement over the causal or stage like order of the three burnout dimensions and what they entail [15]. While some scholars suggest that exhaustion and depersonalisation may develop in parallel [16, 17], other empirical evidence indicate that exhaustion may indeed precede the lack of personal accomplishment or cynicism [18, 19]. As such, it has been argued that emotional exhaustion may be more central to the concept of burnout, which outweighs two other dimensions [20–22]. In a more recent response to such claims, Maslach and Leiter [15] argue that although exhaustion may be the closest to the traditional conceptualisation of stress, the reduction of burnout to exhaustion leads to oversimplification. As such, it could be argued that defining burnout as a *process* and simultaneously, the end *state*, can be complementary to developing a more elaborate understanding of burnout [23].

Influences upon burnout

The path to burnout appears to be affected by the bio-psycho-social risk factors and many different environmental antecedents. Although dysregulation of the hypothalamic-pituitary-adrenal axis has been proposed as the potential mechanism underlying the burnout syndrome [24], the comparison of burnt-out patients with controls revealed no differences in the release of the stress- hormone (cortisol) or the level of prolactin (hormone contributing the regulation of the immune system) [25]. While no biomarkers of burnout have been found to date [25]**,** insomnia and broadly

defined disruptions in sleep and awakening patterns have been consistently identified as main risk factors contributing to burnout through means of emotional and physical exhaustion [26, 27]. Moreover, improved sleep latency, continuity and efficiency have been identified as key determinants in the process of successful versus poor recovery from burnout [28, 29].

Out of the psycho-social risk factors contributing to burnout, disrupted attachment patterns characterised by anxiety or avoidance were associated with less frequent positive social interactions, greater sense of exhaustion, inefficacy and cynicism [30]. In contrast, attachment security was found to be consistently indicative of lower burnout levels [31]. Past exposure to traumatic events [32], as well as working with psychological trauma have been noted as potential risk factors of developing professional burnout [33, 34] with younger age and lesser work experience being associated with higher levels of burnout among trauma therapists[35]. In addition to demands of working with psychological trauma, work environments characterised by violence or patient physical and non-physical aggression have also been associated with the increased levels of burnout among healthcare professionals[36, 37]. Among demographic factors, low education, limited work experience, young age and female gender have been also reported as contributing to one's risk of professional burnout [36, 38–41].

Burnout or depression

Considering many reported associations between burnout and commonly perceived depressive symptoms of physical exhaustion, pain and sleep disturbance [28, 42–44],

rumination and distorted thinking [45, 46] as well as weight change and loss of appetite [9, 42], it has been suggested that burnout may be a type of personal response and a precursor of depression [47]. Depression, previously defined as a way of reacting to challenges in the context of altered mood, distorted cognitions and somatic responses [48], and its associations with work-related stress have been recognised by most recent guidelines [49]and public service initiatives across the National Health Service workforce [50]. The inclusion of burnout in the 10th Edition of the International Classification Diseases [51] alongside the well-established construct of depression, as well as its omission in the 5th Edition of the Diagnostic Statistical Manual [52], contribute to the debate over the nature of burnout-depression relationship. Unsurprisingly, occupational health organisations, researchers, and clinicians alike consider whether burnout should be recognised as a distinctive mental-health disorder and separate from the construct of depression or should both be perceived as diagnostically overlapping constructs [11, 13].

Depression-burnout relationship

The lack of consistent agreement between different diagnostic classification systems and a contradictory body of literature on the nature of the depression-burnout relationship indicate a need for a more systematic analysis of these two constructs. Previous literature reviews [53, 54] noted valid distinctions between the concepts of burnout and depression concluding that both constructs were not redundant. Similarly, studies utilizing confirmatory factor analyses [47, 55–57] revealed that burnout and depression did not load on a singular factor suggesting that both were distinct phenomena. Despite nosological and theoretical differences [55, 56, 7, 58], many

empirical studies continue to provide correlational and factorial evidence suggesting they may be overlapping [11, 59, 60].

The existing body of literature fails to provide a coherent picture on the temporal relationship between burnout and depression. In a sample of healthy Israeli adults (n= 4,861) recruited from a wider population and followed over a period of 18 months during periodic Medical Health Centre examinations, it was revealed that the presence of burnout predicted an increase and intensification in depressive symptoms [61]. These findings are in line with proposals of a unidirectional path from burnout to depression [62] but contrast with a large sample of data (n = 1,632) gathered through routine health examinations and sponsored by a fringe benefit program for employees in a number of occupations including blue-collar, sales, technology, academia, administration and health care [63]. The study reviewing this large sample of data revealed that a recorded increase in depression from Time 1 to Time 2 predicted later increase in burnout from Time 2 to Time 3 over 6-year period [63]. These findings may indicate a possible pathway in a reverse direction from depression to burnout with depression preceding and subsequently, increasing the risk of burnout. The longitudinal data acquired from the professionals working in the medical field however, suggest that this relationship may be most accurately described as more reciprocal in nature. In both studies involving a randomly selected sample of British general practitioners (n= 331)[64] and a national sample of Finnish dentists (n=2555)[65] evaluated over 3 years, researchers concluded that while job strain may predispose professionals towards depression through burnout, people may be also predisposed to burnout via depression. Although disparity between the reported results may be associated with national, cultural or professional differences and a use of a diagnostic classification versus quantified measurement, all highlight the need for the

systematic quality appraisal of the existing literature.

The empirical field has not been unresponsive to this need, and thus, two reviews [13, 66] have provided informative descriptions and summaries on the number of individual studies which evaluated burnout –depression relationship. However, neither provided the information about the severity benchmarks, prevalence or cut-offs for depression and burnout scores used in the individual studies. Lack of such information could contribute to the potential reporting bias due to a threshold and classification variability amongst the individual studies (utilising different normative samples and cut- offs). Data extraction and quality assessment in these and prior reviews [53, 54] do not adhere to a set of pre-operationalised criteria and use mostly descriptive forms of appraisal. Most importantly, however, none of the reviews discuss how the necessary methodological scrutiny was achieved (whether the process of searching, selecting or assessing the studies utilised quality tools, who was involved and how the agreement was established between the reviewers). Accounting for when the reviews were published, as well as the stated inclusion-exclusion criteria [11, 13], a number of relevant studies [67, 68] were omitted while the exact reason for this remains unknown.

Acute psychiatric and secure mental health settings

Individually, depression and burnout have been extensively researched in mental health settings [69]. However, when evaluated together, the research on the burnout-depression relationship appears more limited in acute psychiatric or secure mental health settings when compared to other populations. Considering that burnout rates have been reported between 42% and 49% for mental health professionals (MHP)

working in acute psychiatric settings [70, 71] and between 44% to 54% for MHP working in secure forensic services [72–74] organisations, managers and practitioners delivering occupational health interventions, may be interested to enquire about the relationship between burnout and depression in such settings. However, previous reviews [75, 76], as well as the National audits [77, 78] of the in-patient mental health services, comment on the inconclusive results provided by the existing literature and a variation in the reported prevalence rates, the severity of burnout and different measurement domains of occupational stress. A number of studies to date provided rather conflicting reports on the levels of stress experienced by staff working in acute in-patient and forensic mental health settings. While some studies describe a positive state of affairs including staff well-being and high morale [76, 79], others reveal the increased risk of depression, psychiatric morbidity and elevated rates of psychological stress [80–82]. It is therefore surprising that no attempt was made to systematically review the nature of depression-burnout relationship in these settings considering the disparity across the studies in reporting different levels of psychological stress. Moreover, no attempt to date was made to review the prevalence or severity of both, depression and burnout in this context. We therefore argue that the current state of affairs requires a systematic review of the existing literature and a quality of available evidence defining the relationship between depression and burnout.

Study Rationale

The variety of different research designs, methods, and instruments, as well as the limited quality of the previous literature reviews on the depression- burnout

relationship, call for a review of the quality of the current knowledge. This appears to be especially valid in the context of acute psychiatric and secure mental- health settings where none of these have been done before. The utility of such investigation can be viewed through the prism of occupational health care facilities with regards to prevention, audit and outcome monitoring, as well as designing relevant systemic interventions facilitating wider occupational change. This appears to be significantly important given monetary challenges associated with staffing as well as many aforementioned guidelines [49] and initiatives [50]. The understanding of the nature of the burnout-depression relationship, however, has also a significant relevance to the area of clinical practice. As such, a greater understanding of the available empirical evidence could aid clinicians during the process of case assessment, conceptualization and designing appropriate clinical interventions in the context of burnout or depression.

Aims

This review had two primary objectives. Aim 1 was to investigate potential associations between burnout and depression among the mental health professionals working in acute psychiatric and secure mental-health settings. Aim 2 was to investigate the nature of such relationship; the extent to which burnout and depression can predict one another and the indirect effects contributing to this relationship. The secondary objective was, when possible, to review the findings in the context of the severity and prevalence of burnout and depression.

1.4 Materials and Methods

Inclusion criteria

Table 1 outlines specific inclusion criteria. Consistently with research aims, selected studies were sought to provide quantitative data on the relationship between burnout and depression irrespectively of the statistical model used or whether such investigation was in line with the primary objective of the publication. Longitudinal as well as cross-sectional studies were screened in search for the data. To maximise construct validity and minimise heterogeneous methodology, only the studies which specified measuring the concept of burnout [4, 5, 83]or its dimensions, were included in the review. Considering variation in common depressive features [52], the decision was made to include a broad spectrum of quantitative self-reported measures to account for different clinical manifestations.

Table 1. Inclusion criteria.

Population **
Mental health professionals whose main focus of the job includes working with people with mental-health problems (including psychiatric nurses, psychiatrists, psychologists, counsellors, therapists and psychotherapists).
Context **
Acute in-patient and hospital based mental health settings; acute psychiatry (1) or other secure mental health settings (2); forensic services.
Time period: *
Published between 1981 and February 2016
Publication criteria
English language articles published in peer- reviewed/ academic journals.
Study design
Quantitative study design.
Measures
Utilising quantified, self-reported measures for both concepts; depression AND burnout. When an individualised sub-dimension of depression was distinguishable from broader measures, such studies were considered eligible.
Analysis
Analysis conducted conveyed a statistical measure of the relationship between both variables: burnout and depression (e.g., correlational or model-testing design).

Note: ** When acute mental health settings and/or mental health professionals were distinguishable or specified as part of a broader sample, such studies were considered eligible for inclusion. * The time period specified was chosen accordingly with the first available publication of the Maslach Burnout Inventory [4].

Search Strategy

On the 6th February 2016, five databases were searched (PsychInfo, EMBASE, MEDLINE, CINAHL PLUS and SCOPUS) with subsequent limits applied: peer reviewed and/or academic journal article, published in 1981 onwards, English language, population and/or sample; human. Specific search terms (Table 2) were adapted to cover relevant sections by the Cochrane acronym (PICOC) standing for population, intervention, comparison, outcomes and context [48]. Two sections (intervention and comparison) were not relevant to this review and were removed.

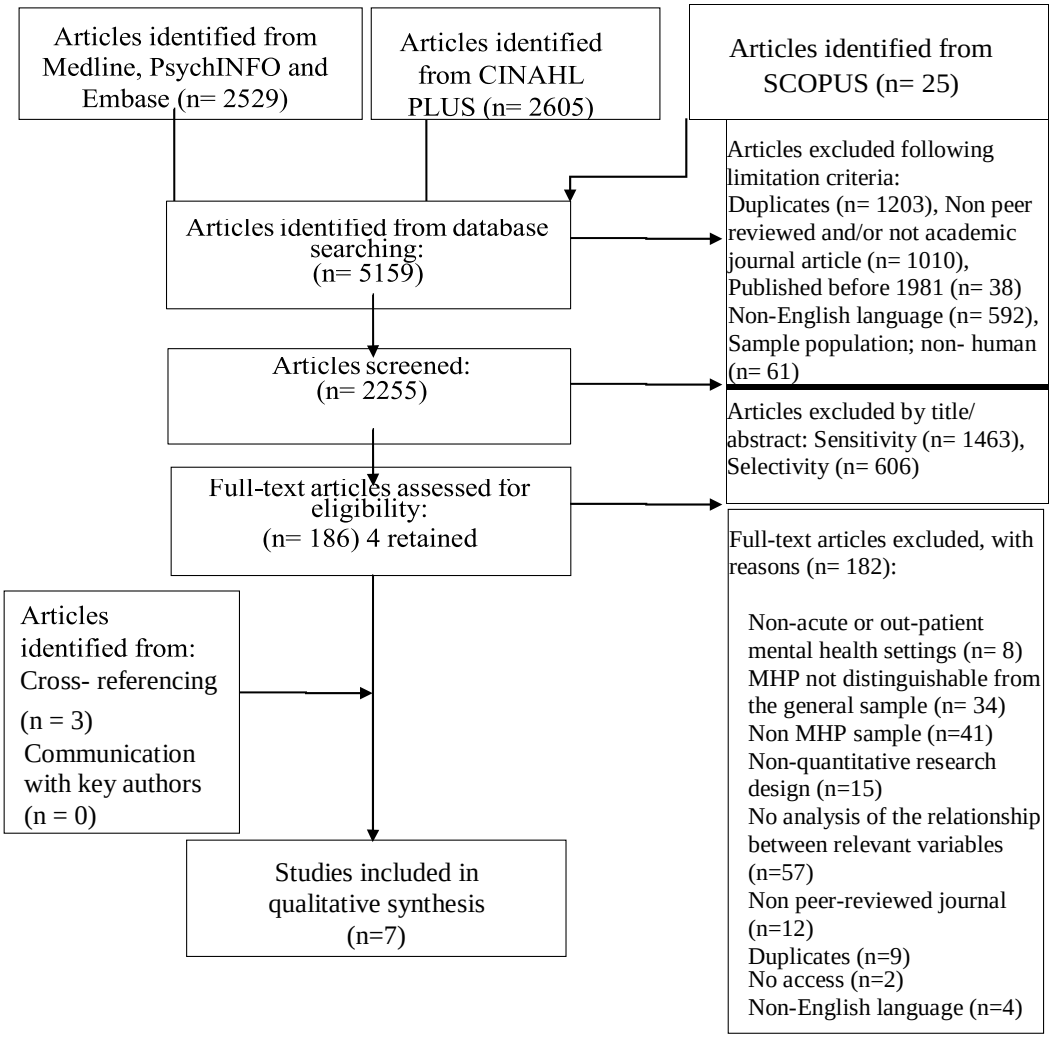
Table 2. Specific search terms used across the databases.

Primary constructs investigated:	Comprehensive list of terms:
Population	
Mental- health professionals:	(personnel or professional or worker or staff or employ* or clinician or professional* or practitioner* or nurs* or medic* or physician* or psycholog* or psychiatr* or therapist or counsellor or psychotherap*)
Context	
Acute mental- health settings:	(hospital or acute or "mental health" or psychiatr* or inpatient or ward)
Secure mental- health settings:	(secure or forensic or criminal or offender*)
Outcome	
Burnout:	(burnout or "occupational stress"** or "work stress"** or "job stress"**or "emotional exhaustion" or exhaustion or depersonalization or depersonalisation or "personal accomplishment" or accomplishment or efficacy or cynicism).
Depression:	Depress*

Notes; ** Although such terms are considered to be conceptually different to burnout, the terms were included following concept mapping across the databases. This strategy was used to optimise sensitivity of the process and diminish the possibility of neglecting relevant literature.

Accordingly, with the process of article selection (Figure 1), a total of 5159 papers were retrieved from 5 databases. Following the limitation criteria, 2904 articles were removed. In order to systemise the manual screening of the remaining 2255 papers, web-based platforms were utilised while selecting abstracts in two stages of sensitivity and selectivity screening [84]. To ensure sensitivity, titles and abstracts were initially screened against key terminology; abstracts containing none to one key terms were excluded. To ensure selectivity, the remaining abstracts were divided into three categories of ‘’irrelevant’, ‘’uncertain’’ and ‘’relevant’’, with the last two categories accounting for the retained 186 articles. Screening against the inclusion- exclusion criteria retained 4 articles with additional 3 identified via cross- referencing. Personal communication with the key authors did not reveal any further articles and thus, 7 articles were retained for final analysis.

Figure 1. Diagram representing literature search process.



Notes; MHP: Mental Health Professionals.

Quality assessment

Despite some quality guidelines available such as the Centre for Research and Dissemination [85] guidelines or the National Institute for Health and Clinical Excellence [49] guidelines for reviewing the quality of reported associations, no established set of criteria was considered to be sufficient in terms of providing sensitive and robust quality criteria. None of the available standardised checklists designed by the Consolidated Standards of Reporting Trials [86] or the Scottish Intercollegiate Guidelines Network [87] were deemed to provide suitable for the assessment of studies in the current review. The final quality criteria were developed with consideration of all the aforementioned sources and by the pre-operationalised rating guidelines available in Appendix 1a. The final assessment tool, coded accordingly with an operationally defined quality criteria, has been presented in Appendix 1b. All 7 articles were assessed by the main author and 2 independent reviewers (senior clinical practitioners). Any discrepancies or uncertainties were resolved through discussion leading to the final ratings. The inter-rater reliability was calculated with the use of Krippendorff's Alpha Reliability Estimate with good results (KAlpha= .9605, LCI: .928 to UCI: .983).

Data selection and synthesis

In order to address primary and when possible secondary aims, relevant information was extracted from the individual studies (Table 3). Data is synthesised accordingly to five criteria allowing more comprehensive representation of the results reported by the individual studies. The criteria include as follows; author, year and country (1), sample size and characteristics (2), measures with reported validity/ reliability (3), research design and statistical analysis (4) and relevant statistical data including effect sizes, strength, and direction of associations, prevalence rates, means and standard deviations when available (5). As some studies evaluated variables beyond the scope of this review, only the data directly relevant to the specified aims are reported. A meta-analytical synthesis was not deemed appropriate due to the high heterogeneity of the studies selected with regards to sample characteristics, measurement differences or the nature of reported results.

Table 3. Data synthesis: methodological characteristics and reported results.

Author, year, and country:	**Sample size and characteristics:**	**Measures (reported validity/ reliability):**	**Research design and statistical analysis:**	**Results**
1. Madathil et al. [88], USA	Licensed staff nurses working in state psychiatric hospitals (n=89 with 3 participants excluded); 88% female; 48% working in adult units, 12% in forensic units. Further demographics unknown.	B: MBI-HSS (Cronbach's α for EE, DP, and PA reported as .92, .61 and .74 respectively), D: BSI (Cronbach's α= .90, 3 items only due to ethical concerns).	CS, Regression analyses:	Depressive symptoms were a significant predictor of PA (β = −2.944; p = .001).
			Exploratory mediational analyses:	D-PA relationship was significantly mediated by TL (β = −.499; CI = −1.286 to -.039). Neither of the relationships between D-EE (β = .808; CI = −0.79 to 2.068) or the D-DP (β = .155 CI = −0.61 to 6.25) were mediated by TL.
			Prevalence statistics:	EE mean=31.2** (SD= 12.16), DP mean=12.24** (SD= 5.56), PA mean= 43.84 ** (SD= 7.82). D means (SD) = not reported. High levels of all the burnout dimensions.

2.Karanikola et al., [89], Greece	PMHNs (n=226, 41.2% male, 58.8% female, 65.5% employed in hospital settings). Psychiatric clinics of general hospitals 17.25 % (n = 39), Athalassa Psychiatric Hospital 38.49% (n = 87).	B: MBI- Greek Version (Cronbach's α reported for EE, DP and PA as .85, .71 and .84 respectively), D: BDI (Cronbach's α = .92).	CS, Pearson's correlation coefficient: Linear Regression: Prevalence statistics:	Statistically significant, positive correlations found between EE and D ($r = 0.562$, $p<0.0001$), DP and D ($r = 0.394$, $p<0.0001$), while PA and D were found to be significantly negatively associated ($r = -0.186$, $p = 0.009$). D predicted EE ($\beta = .206$, $p = .01$, $R^2 = .427$) and DP ($\beta = .163$, $p = .072$ $R^2 = .219$). Model's predictive power increased, when shifting from uni-variate to multi- variate analysis after including IV- anxiety. EE mean=14.87 (SD= 9.5), DP mean = 6. 53 (SD= 5.3), PA mean = 34.49 (SD= 8.7), BDI mean= .92(SD= 8.18).

3.Firth et al., [90], UK	Nursing staff (n=200, 140 female staff nurses, mean age= 29.3); 31.5% enrolled nurses, 30% staff nurses, 31% charge nurses and 7.5% nursing officers, working in 3 psychiatric and mental handicap hospitals and medical units of three general hospitals.	B: MBI-HSS (Cronbach's α not reported). D/PD: BDI along with questions developed to assess the concept of 'professional depression.' D: reported *r=0.54, P* < 0.001 correlation with the BDI scores). B: Cronbach's α not reported.	CS, Pearson's correlation coefficient: Prevalence statistics:	Significant positive association was found between EE and D (***r*= 0.59, *P*<0.001). EE mean= 18.3 (SD=9.5), PA mean= 35.9** (SD=7.3), DP mean= 5.9 (SD=5.1). D: mildly depressed (women 22%, men 21%), moderately depressed (women 6%, men 16%), severely depressed (women 0.7%, men 0%). D mean/SD= not reported.

4. » Wood et al., [91], UK	MHP's (n=1870, mean age= 41, 63% females, 75% white, 51% PMHN's); 26% nursing assistants or support workers, 5% PMHN's and other occupations, 4% occupational therapists, 7% psychiatrists, 2% clinical psychologists, 4% social workers from 17 NHS Trusts (100 inpatient units, 26 CMHT's, CR and HTT units).	B: MBI with DP sub-scale excluded due to ''limited variability in scores'' (Cronbach's α reported for EE and PA as .91 and .79 respectively), D: Complementary 3-item measures of depression adapted from Warr et al., (1990). Cronbach's α reported at .83.	CS, Pearson's correlation coefficient: Prevalence statistics:	D was positively correlated with EE (r= 0.66) and negatively correlated with PA (r= -.28). p- values not reported. D mean =2.08 (SD=0.84); EE mean= 2.51 (SD=1.50), PA mean= 4.31 (SD=1.11).

5. » Johnson et al., [39], UK	MHP's (n = 2258, mean age= 40.7, men 36% women 64%) in in-patient (100 wards) and 36 CMHTs of the 19 NHS Trusts. In-patient; 50 (35%) AGW, 12 (11%) Forensic, 10 (7%) PICU's, 10 (9%). Staff groups: 47% (n=1054) nurses, 6% (n=135) psychiatrists, 2% (n=44) psychologists, 4 % (n=82) occupational therapists, 4 %(n=86) social workers, 5% (n=111) ward managers, 4% (n=93) other occupations and 4% (n=82) other professionals without professional qualification.	B: MBI (Cronbach's α not reported). D: Job-related Affective Well-being Scale adapted from Warr et al., (1990) with an independent subscale of depression– enthusiasm where enthusiasm predominates at high scores and depression at low scores on a 1 to 5 scale. (Cronbach's α not reported).	CS, Pearson's correlation coefficients: Prevalence statistics:	D-E was negatively correlated to EE (r= -.64, p<.0005), negatively correlated to DP (r= -.40, p<.0005) and positively correlated with PA (r= .39, p<.0005). Total sample: high EE (45%), high DP (29%): EE mean= 20.1(SD=12.0), PA mean=33.7 (SD=8.3), DP mean= 5.7 (SD=5.6). **AGW:** EE mean= 21.1** (SD=12.7)- 49%, PA mean=33.1 (SD=8.4)- 28%, DP mean= 3.37 (SD=0.78)-32%, D-EN mean=3.37, (SD=0.78); **Forensic wards:** EE mean= 19.0 (SD=10.8) - 40%, PA mean= 32.1 (SD=8.9) - 30%, DP mean= 3.55 (SD=0.70)-32%, D-EN mean= 3.55 (SD=0.70).

6. Gito et al., [92], Japan	Nurses (n=313, 80.8% female, 19.2% male) employed at three psychiatric hospitals (employment duration; 6.3% under 1 year, 24.6% up to 4 years, 32.2% from 5 to 9 years, 17.9% from 10 to 19 years, 18.9% over 20 years.	B: Japanese Burnout Scale. (Cronbach's α not reported). D: BDI-Japanese Version (Cronbach's α not reported).	CS, Pearson's correlation coefficient:	Significant positive association was found between EE and D (***r*****=** 0.58, *P*<0.01), between DP and D (***r*****=** 0.35, *P*<0.01) and between PA and D (***r*****=** 0.22, *P*<0.01). No B or D means/SD's reported.
7. Szényei et al., [93], Hungary	Members of the Hungarian Psychiatric Association (n=160, mean age=46.1, 57% psychiatrists, 25.3% psychiatric residents, 10.1% psychologists, 7.5% other professionals, 100% female and 36.3% working in the hospital settings).	B: MBI-Hungarian Version (Cronbach's α not reported). D: BDI-SF (reported Cronbach's α of 0.83).	CS, Pearson's correlation coefficient: Prevalence statistics:	Positive correlations were found between D and EE depression (*r*=0.509, *p*<0.001), D and DP (*r*=0.263, *p*<0.01), negative correlation was found D and PA (*r*= -0.525, *p*<0.001). D: mildly depressed (12.1%) moderately depressed (6.4%) severely depressed (3.2%). D mean/SD= not reported. B mean/SD= not reported. Total = 21.7% suffering from depression.

Note. AGW; Acute General Wards, PICU: Psychiatric Intensive Care Units, CAMHS: Child and Adolescent Mental Health Service, OPMHU: Old People Mental Health Units, MHP's: Mental Health Professionals, PMHN's: Psychiatric Mental Health Nurses, MHHS: Mental Health Services, CMHT's : Community Mental Health Team's, CR: Crisis Resolution, HTT: Home Treatment Teams, CS: cross-sectional, B: Burnout, EE: Emotional Exhaustion referred to interchangeably as burnout exhaustion and/or exhaustion, PA: Personal Accomplishment referred to interchangeably as burnout inefficacy, DEP: Depersonalisation referred to interchangeably as burnout cynicism and/or cynicism, MBI: Maslach's Burnout Inventory, MBI-HSS: Maslach's Burnout Inventory-Human Services Survey, MBI-GS: Maslach's Burnout Inventory-General Survey, D: Depression referred to interchangeably as professional depression, D-EN: Depression-Enthusiasm Scale, BSI: Brief Symptom Inventory, BDI: Beck Depression Inventory, BDI-SF: Beck Depression Inventory -Short Form, CI: Confidence Interval, TL: Transformational Leadership. ** High level based on the relevant normative sample. » Studies by Wood et al., [91] and Johnson et al., [70] used the data derived from the same research initiative by the National Institute of Health Research Service Delivery and Organisation Programme between 2007 and 2009.

1.5 Results

1.5.1 Characteristics of the studies

All the reviewed studies (n= 7) utilised a quantitative and cross-sectional design; three studies were conducted in the UK while the remaining four were conducted in the USA (n=1), Greece (n=1), Japan (n=1) and Hungary (n=1). The sample size across the studies ranged from 89 to 2258; six of the studies used mixed gender samples with the mean age ranging from 29.3 to 46.1 years, whilst three studies did not report data on mean age range. Six studies were multi-site including two most common occupational groups of qualified nursing staff (30%-100% of the total sample) and psychiatrists (6% -57% of the total sample). The percentage of occupational therapists, psychologists, social workers, support workers, ward managers and other professionals without professional qualification varied across studies. Not a single study focused solely on the sample of forensic mental-health professionals, however, three of the samples reported that their general sample contained data from forensic wards or indicated that the initial recruitment included these sites. The data gathered from the forensic and general psychiatry sites were reported to represent between 12% and 48 % of the entire sample respectively. Two of the studies did not report individual recruitment sites; the type or the number of wards in each unit. Convenience sampling was employed in all of the studies. The response rates ranged between 39.8% to 95.7%.

1.5.2 Quality of the studies

The quality ratings for each of the evaluated studies are reported in Table 4. The cumulative quality scores across 4 domains ranged from 16 to 33, out of the maximum score of 36 points. The numerical value was assigned to each item for descriptive purposes.

Although most of the studies appeared to successfully address rationale and utility, as well as aims and objectives (n=5), the inclusion/ exclusion criteria were scored the lowest among the studies (n=4) due to poorly operationalised criteria in the context of the target population. Common limitations included the inclusion of largely heterogeneous occupational groups under one umbrella term [93], homogeneity of demographic characteristics [92]or the lack of information about sample characteristics [88]. The quality of the samples rated as "poorly addressed" (n=3) failed to review sample characteristics in the context of the intended target population. Similarly, "poorly addressed" recruitment ratings were awarded (n=3) due to the lack of clarity about the process of selecting, approaching and distributing questionnaires among the participants.

The studies appear to present a degree of strength with regards to the quality of the utilised burnout measure with six of them utilising versions of the Maslach Burnout Inventory [4, 83] previously referred to as most popular gold-standard measure of burnout [94, 8] with three of the studies in the current review reporting adequate to good internal reliability ranging from .61 for depersonalisation to .92 for emotional exhaustion [70, 88, 89, 91].

One study [92] utilised the Japanese version of the Burnout Scale [95] however, as no psychometric values were explicitly reported and the referenced publication was not available in the English language, it was not possible to objectively determine whether the scale has been evaluated within the target population. Subsequently, with no verifiable psychometric data and the lack of response from the authors with regards to this, this study was rated as poorly addressing the measurement of burnout.

Four studies [89, 90, 92, 93] used the translated versions of the Beck Depression Inventory, BDI [96, 97]. While Szényei et al. [93] used an abbreviated Hungarian version of the BDI-short form [98], Firth [90] utilised questions assessing the concept of 'professional depression' alongside the BDI. Due to the exclusion of relevant items from the Brief Symptom Inventory [99], the quality of the depression measurement was rated as "poorly addressed" in Madathil et al [88] study, and two other[70, 91], which used a bi-polar depression–enthusiasm scale [100], limited to three effective items measuring high levels of enthusiasm and thus, low levels of depression.

Although only two studies provided a sample size calculation [88, 89], the sample sizes (160 to 2258 participants) of the remaining five studies were deemed sufficient to detect medium effect sizes. The Karanikola et al. [89] study appeared to have the highest methodological quality. In contrast, studies by Gito et al. [92] and Szenyei et al. [93] were rated as presenting the lowest quality due to inappropriate, biased or unclear methodology; lacking necessary detail, precision or relevance and utilising an inconsistent approach throughout most of the research stages. Although all of the studies appeared to address the results (n=7) successfully, the internal and external validity was rated "poorly addressed" among the three studies that failed to recognise and account for likely confounding variables, while not acknowledging sample and

measurement limitations and their impact on the internal consistency and generalisability (e.g., poor representativeness of the sample, inferring causational evidence from correlations).

1.5.3 Critical review of the results

Our primary aim was to investigate potential associations between burnout and depression among the mental health professionals working in acute psychiatric and secure mental health settings. Six of the studies which investigated the relationship between depression and burnout using correlation analyses (Table 4) helped us to address that aim. All of them reported a significant and positive relationships between depression and emotional exhaustion ranging from 0.56 in a Greek sample of the psychiatric mental health nurses (n=226) [89], to 0.66 in a UK sample of mental health professionals (n=1870) [91]. Four of the studies reported that depression and depersonalisation were positively associated, with correlation coefficients ranging from weak at 0.26 [93] to moderate at 0.39 [89]. Johnson et al [70] however, reported a moderately negative relationship between the depression-enthusiasm scale and depersonalisation. Wood et al [91] excluded depersonalisation scores from the final analysis quoting the limited variability in scores as reason for such exclusion. Two of the studies reported that depression and personal accomplishment were negatively associated, with correlation coefficients ranging from weak at -0.19 [89] to moderate at -0.53 [93]. Two studies reported positive associations between depression and inefficacy or lack of personal accomplishment [92] and in case of Johnson [70] study, the scores on the depression-enthusiasm scale.

Table 4: Ratings of study quality.

Author, year and country:	*Rationale and utility*	*Aims and objectives*	*Sample*	*Inclusion/ exclusion criteria*	*Recruitment*	*Sample size calculation*	*Measure of depression*	*Measure of burnout*	*Data analysis*	*Results*	*Internal validity*	*External validity*	*Total*
Madathil et al., [88], USA.	WC (3)	WC (3)	PA (1)	PA (1)	PA (1)	AA (2)	PA (1)	WC (3)	WC (3)	WC (3)	AA (2)	WC (3)	26
Karanikol a et al., [89], Greece.	AA (2)	AA (2)	WC (3)	WC (3)	WC (3)	WC (3)	WC (3)	WC (3)	WC (3)	WC (3)	WC (3)	AA (2)	33
Firth et al., [90], UK.	AA (2)	AA (2)	AA (2)	AA (2)	PA (1)	AA (2)	AA (2)	WC (3)	AA (2)	AA (2)	AA (2)	AA (2)	24
Wood et al., [91], UK.	WC (3)	WC (3)	AA (2)	PA (1)	AA (2)	AA (2)	PA (1)	WC (3)	AA (2)	AA (2)	AA (2)	PA (1)	24
Johnson et al., [70], UK	AA (2)	WC (3)	AA (2)	PA (1)	AA (2)	AA (2)	PA (1)	WC (3)	WC (3)	WC (3)	WC (3)	AA (2)	27
Gito et al., [92], Japan.	PA (1)	PA (1)	PA (1)	AA (2)	PA (1)	AA (2)	WC (3)	NA (0)	PA (1)	AA (2)	PA (1)	PA (1)	16
Szényei et al., [93],	PA (1)	PA (1)	PA (1)	PA (1)	AA (2)	AA (2)	WC (3)	WC (3)	PA (1)	AA (2)	PA (1)	PA (1)	19

Note. WC; Well Covered, AA; Adequately Addressed; PA; Poorly Addressed, NA: Not Addressed.

Our second aim was to investigate the nature of the burnout-depression relationship; extent to which burnout and depression can predict one another and the indirect effects contributing to this relationship. Two studies, utilising more elaborate statistical analyses on the effects of depression on burnout dimensions using regression and exploratory mediation analyses, helped to address this aim. The results of the Karanikola [89] study revealed that depression was a significant predictor of emotional exhaustion, but not depersonalisation, while the findings of Madathil [88] quoted depressive symptoms as a significant negative predictor of personal accomplishment. Karanikola et al [89] noted that after entering another variable of anxiety (alongside depression) the predictive power of the model increased. While investigating the indirect effects of other variables, Madathil et al [88] reported that transformational leadership mediated the relationship between depression and personal accomplishment but not the one with emotional exhaustion or depersonalisation. The effect sizes for both of the studies were small to medium in magnitude based on the Cohen's [101] benchmarks.

Last but not least, our secondary objective to review the findings in the context of the severity and prevalence of burnout and depression was addressed to some extent albeit inconsistently across the studies, with relevant reports on depression but not burnout and vice versa. Six studies reported some form of data (e.g., percentages, means) on the severity or prevalence of depression, and five studies did so for burnout. Overall, studies reported that participants were mainly non-depressed or mildly depressed with lower depression and higher enthusiasm on the depression-enthusiasm scale [70, 91]. Among the studies [89, 90, 93] utilising versions of the BDI, the severity of depression was mostly mild with the prevalence ranging from 0 to 3.2% for severe depression and 12% to 22% for mild depression. Three studies reported burnout rates

to be mostly within the low to average range [89–91] while two studies reported high levels of burnout. Madathil et al [88], revealed high rates across all three burnout dimensions, while Johnson et al [70], reported high levels of emotional exhaustion among acute general mental-health wards (49%) as compared to the average levels in forensic wards (40%) . Two studies which reported high scores on emotional exhaustion or depersonalisation, also reported high levels of personal accomplishment or efficacy [70, 88].

1.6 Discussion

The findings of this review can be summarized in four general points. Firstly, the depression and emotional exhaustion relationship is the strongest and most consistently reported across all the studies. Secondly, the relationship between depression and other burnout dimensions (depersonalisation, personal accomplishment) is less consistent and more likely to be explained in the context of other variables such as transformational leadership or anxiety. Thirdly, the severity of depression and burnout are mostly mild and average with some individual variations in prevalence and severity. Finally, the literature assessing burnout-depression relationship within acute psychiatric settings is particularly restricted in number and of limited quality with no identified studies focusing solely on forensic mental health settings.

The findings across the studies indicate that higher levels of emotional exhaustion (EE) are associated with greater levels of depression with a positive linear relationship reported across nationally diverse acute mental health settings. These reports are

consistent with the findings of other studies with direct care services [102] and thus, may indicate that emotional exhaustion may be the most central dimension of burnout [103] within the acute mental health settings. Despite limited generalisability, studies reviewed suggest that for professionals working in acute mental health settings, the risk of depression may occur in parallel with the risk of emotional exhaustion. The exacerbating effects of both, emotional exhaustion and depression on the service provision, may be more detrimental with regards to personal (e.g., other mental- health problems) and organisational outcomes (e.g., turnover) than the individual effects of either of them [104]. Although this suggestion is far from being an innovation, the adaptation of more elaborate models assessing direct and potential in-direct effects within the acute psychiatric and specifically, secure mental health settings, is being encouraged.

The preliminary findings also confirm a likely uni-directional nature of the relationship from depression to EE [89], as well as the lack of mediational effects of transformational leadership on this relationship [88]. These results are in line with longitudinal reports indicating that depression may at times precede burnout in medical healthcare settings [105] and thus, can potentially increase the risk of developing burnout. However, other studies in general settings [47, 61, 65] reported reverse effects, suggesting that burnout was able to precede depression. The bi-directional nature of the depression-burnout relationship was not evaluated by any of the studies reviewed, which revealed a significant gap in the literature.

The findings on the relationship between depression and two other burnout dimensions; personal accomplishment and depersonalisation, present less consistent results. Firstly, the studies report mixed findings with regards to strength (weak to

moderate) or the gradient of the relationships (positive versus negative correlations) between depression, personal accomplishment, and depersonalisation. The majority of studies revealed positive associations between depression and depersonalisation except one study reporting inverse relationship [91]. A similar pattern was observed for depression-personal accomplishment relationship with most of the studies reporting negative associations except one study [70]. In both cases, the seemingly contradictory results can be explained by the sample differences and measurement limitations. These included limited screening ability and a bi-polar conceptualisation of depression–enthusiasm [100] restricted to evaluation of a pure affect [106] as compared to more comprehensive evaluation of cognitive, behavioural and physical expressions of depression such as the BDI [97]. Previous reports on the potentially inconsistent factor structure of this scale should be also considered [107, 108]. These findings appear to be consistent with other studies reporting significant but less strong relationships between depersonalisation, personal accomplishment and depression in general population and Intellectual Disability (ID) settings [109, 110].

Secondly, two studies [88, 89] indicated that the relationship between depression and depersonalisation or personal accomplishment may be dependent on the effects of additional variables (transformational leadership and anxiety). The limited number of only two studies investigating such effects reveals another gap in the existing literature with regards to the lack of more elaborate statistical and hypothesis-testing models investigating the processes explaining the relationship between depression and burnout. Transformational leadership mediated the relationship between depression and personal accomplishment [88] suggesting an indirect relationship between these variables. Notwithstanding the methodological problems of the study (e.g., sample size, methodological bias) and thus, limited generalisability, these results indicate that for the

professionals working in acute mental health settings, the effects of depression may be buffered by positive external resources (transformational leadership). Further studies (extended to multiple sites and secure mental health services) should evaluate whether such results can be replicated in the UK settings before exploring the effects of transformational leadership in the context of staff training or wider organisational interventions.

Considering that the relationship between anxiety and depression has been widely established [111] , it is not surprising that in one of the studies [112], anxiety, alongside depression, has significantly contributed to the variance explained in depersonalisation. These results are consistent with the findings in other helping professions (e.g., humanitarian aid workers or general nurses) reporting significant relationships between anxiety, depression and burnout [113–116]. Given that depression was not a significant predictor of depersonalisation (before entering anxiety into the model), these preliminary findings may suggest anxiety (whether alone or combined) may increase the risk of treating others as impersonal objects (depersonalisation). The potential effects of such behaviour in the context of service-provision and patient care within the acute mental health settings should substantiate further investigation of these and other co-morbidities (e.g., obsessive and compulsive thoughts and behaviours) [117] and most of all, underlying psychological processes explaining the effects observed. The cross-sectional nature of these studies reveals another gap in the literature in acute mental health settings and highlights that at this stage, we simply do not know whether the hypothesised effects of transformational leadership, depression or anxiety are consistent in time, how they affect burnout over time and finally, how much time is needed to alter those effects.

Evaluating these findings in the context of the severity and the prevalence of both (depression and burnout) has proven more difficult due to the variation in the type of depression measures and missing information. This reveals another gap and a limitation of the existing literature with regards to the lack of sufficient information on severity and prevalence of depression and burnout. Overall, most of the studies reported normal (non-depressed) to mild range of depression with the prevalence depending on the reported severity (ranging from 0-3.2% for severe depression and up to 22% for mild depression). These results are comparable to the reports of the World Health Organisation [118] in general population.

Although emotional exhaustion and depersonalisation were mostly within the average range, one study of nursing staff working in state psychiatric hospitals [88] revealed high rates for both. Another study [70] reported service-specific differences with high levels for emotional exhaustion (and higher depression levels) among general acute wards when compared to forensic wards. These findings are comparable to one other multisite study of acute inpatient wards [79] and suggests that some dimensions of burnout (emotional exhaustion being the most likely) may be more prevalent within certain services or specialities (e.g., general acute wards). However, different response rates, mixed professional samples and the duration of the data collection (3 years) could affect the results reported. Same findings reveal another gap in the literature with regards to the understanding of whether the relationship between depression and burnout depends on the severity of each, and the lack of studies investigating how this is altered by contextual and service-specific factors. Interestingly, most of the studies reported average to high levels of personal accomplishment irrespectively of the level of

emotional exhaustion or depersonalisation. This suggests another clinical picture emerging where the high levels of emotional exhaustion or depersonalisation might co-occur with great personal accomplishment, which has been recently confirmed in studies of mental-health professionals working in out-patient and in-patient settings [119, 120].

Given that none of the studies reviewed focused specifically on the secure forensic mental health settings, the generalisability of these results is restricted to the acute mental health settings with further limitations posed by the small number of studies reviewed and some methodological problems. The use of convenience sampling, possible selection bias, lack of consideration towards potential confounding variables or biased measures, limits the representativeness and validity of the results observed. Although some suggestions were made with regards to the interpretation of current results, these should be treated with caution given the use of retrospective and self-reported measures limiting any causal inferences about the direction of the depression-burnout relationship (e.g., whether depression precedes the development of burnout or whether the reverse effect is possible). The overall lack of comparable studies in acute in-patient mental-health settings indicates another limitation with regards to the validity of any clinical and organisational recommendations. Bearing in mind these limitations, occupational health services, managers and clinicians working with employees affected by depression and/or burnout, may consider contextual or individual interventions that are likely to address both of those issues.

1.7 Limitations of the review

Some primary limitations must be acknowledged while evaluating the quality of this review. The inclusion academic articles published in peer- reviewed journals, as well as the limitations imposed by the English- language limit the availability of the resources, indicating a possibility of a publication bias. As the review focused on evaluating self-reported, quantitative data, it omitted qualitative or biological measurement data (e.g., biomarkers of depression). The search terminology, as well as the specified period (1981-February 2016), was determined by the adopted definition of burnout. Although the additional terms were incorporated into the searching process to limit the possibility of omitting relevant results, it is possible that these were biased towards a pre-defined conceptualisation of burnout and at the exclusion of broader literature on occupational stress. Given that the review focused on the general concept of "depression" rather than associated symptomatology (e.g., cognitive distortions, sleep disturbance), relevant results may not have been captured. As none of the studies reported results on the specific depressive domains including affective (e.g., pessimism, self-criticism, feelings of guilt) and somatic subscales (e.g., loss of energy, change in sleep patterns and appetite), further reviews should consider evaluating the relationship between the individual domains for depression and burnout.

Although the quality criteria utilised in this review were subjective, care was taken to improve the reliability of the ratings by utilising three independent raters and assessing the overall agreement between the raters. Moreover, efforts were undertaken to address any potential limitations of the criteria by reviewing available guidelines [87, 114] and

other standardised checklists [121, 122]. Finally, the lack of statistical analysis combining available data in a form of meta-analysis could be considered as weakness. Although only a small number of studies has been included in this review, the heterogeneity among the studies with regards to the country of origin, sample, recruitment procedures, measures and the overall quality of the studies, have been considered as contraindications for combining the studies. The PRISMA statement for reporting systematic reviews and meta-analyses [121] suggests not to combine the studies with a mix of the high and low risk of bias. The review of the studies revealed varying degrees of bias or the potential for bias and thus, it was deemed that a combined analysis would not yield a meaningful interpretation.

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Chapter 2: Empirical Study

2.1. Journal Article: Title Page

Burnout and Job Satisfaction in Secure Mental Health Settings; exploring the effects of Social Support, Psychological Mindedness and Psychological Flexibility.

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2.2 Abstract

BACKGROUND: For staff working in Secure Mental Health Services, there is limited research on the indirect effects of internal processes (psychological flexibility, psychological mindedness) and external resources (social support) on the demands, burnout and satisfaction with work.

OBJECTIVE: This study aimed to explore any direct relationships of subjectively perceived understanding, predictability, control (job demands) with burnout and job satisfaction, and in-direct effects of social support, psychological mindedness and psychological inflexibility on these relationships.

METHODS: A cross-sectional design with quantitative measures was used with Scottish National Health Service (NHS) employees (n=199) working in secure mental health services; forensic (58.65%) or intellectual disability (41.35%). Data gathered from the final sample of 141 nursing staff was analysed using t-tests, bi-variate correlations, hierarchical regressions and a series of mediation, moderation and moderated-mediation analyses.

RESULTS: Perceived understanding, predictability and control were relevant to job satisfaction but not all the burnout dimensions. Psychological inflexibility was a mediator and social support- an independent predictor in these relationships. Psychological mindedness has relevance to the dimension of personal accomplishment.

CONCLUSION: Job demands are likely to follow individualised pathways through which they contribute to job satisfaction and burnout. Social support and psychological flexibility are of significant value and must not be understated.

Key words: support, psychological flexibility, burnout, job satisfaction.

2.3 Introduction

The demands of Secure Mental Health Services (SMHS) place the professionals working there in a category of critical occupations [1]. The term of critical occupations [2] was originally introduced to emphasise the role of particular occupations in protecting communities while facing the possibility of encountering potentially traumatic events, which may affect employees' psychological well-being. The SMHS of forensic and intellectual disability (ID) specialities share many common characteristics with regards to safety and potential violence [3, 4], severity of patients' cognitive and mental difficulties [5] or exposure to challenging behaviours that "threaten the quality of life and/or the physical safety of the individual or others" [6]. Despite the potential for physical and psychological risks [1], the research on burnout and job satisfaction within the SMHS have been more limited [7, 8] when compared to criminal justice [9] or general metal health settings [10].

Since the initial introduction of burnout among the public service workers [11], the concept was expanded and conceptualised as consisting of three sub-facets; emotional exhaustion- feelings of being drained of resources and energy, depersonalisation - negative responses in attitudes towards service users and a lack of personal accomplishment- a tendency to evaluate ones work as insufficient [12]. The growing interest in burnout however, has often overshadowed positive work-related outcomes [1] such as job satisfaction.

Defined as a positive emotional state resulting from the appraisal of one's job experiences [13], job satisfaction, has different relationships with job demands and psychological strains when compared to burnout [14, 15]. In spite of this however, many research embrace dichotomous view of the two as opposite polarities where the presence of one indicates the absence of the other and thus, leading to omissions and biases within the existing literature. Research within forensic and ID settings report many potential costs for the individual (poor psychological well-being, alcohol abuse, avoidance coping and psychological inflexibility) and the organisation (poor organisational commitment, turnover and quality of patient- staff relationships) associated with burnout or job satisfaction [8, 16–21]. Out of the studies which specifically address the SMHS work settings, many suffer from methodological problems including poor response rates [8, 22–24], limited representativeness of the sample [7] and a prevalence of descriptive and correlational designs favouring organisational and generic measures [25–28] at the expense of more specific mechanisms of action for burnout or job satisfaction (e.g. avoidance coping or psychological inflexibility) [29].

2.3.1. Perceived job demands

The demand-control-support model [30] has addressed the specific mechanisms of action by proposing that control and support within one's environment are likely to buffer negative impact of job demands on the potential outcome; burnout or job satisfaction [31–33]. Although substantiated by research [34, 35], this theoretical framework favours external resources within ones' environment. In contrast, the

cognitive, the cognitive appraisal model [36, 37] emphasises the process of initial (primary) appraisal and further, more elaborate (secondary) appraisal while interpreting or making sense of the event. Consistently with this model, the perception or interpretation of job demands (including situational context) as positively challenging or threatening predicts helpful or unhelpful outcomes [31, 33]. Thus, the perception of control, predictability and understanding of one's work environment [38] are likely to predict whether one is satisfied or burnt-out. Although this proposal has been investigated in acute mental health settings [39], none of the studies within the SMHS evaluated all three factors (understanding, predictability, control) in one comprehensive model.

Control, defined by the extent to which one can affect desired outcomes by effectively influencing events, people or things [38], proved significance in protecting against and predicting burnout, and job satisfaction in SMHS [7, 26, 34, 40] and wider in-patient mental health settings [41, 42].Understanding of how and why events happen [38], as well as understanding criminogenic and mental-health problems of service-users, were noted to reduce the risk of burnout while being a source of satisfaction for staff in SMHS [43, 44]. Clinical presentations of patients within the SMHS (including cognitive and psychological disorders, challenging and offending behaviours, social or communication difficulties) were identified as notoriously complex and potentially difficult to understand or interpret [16, 45–48]. All of these may affect the extent to which one can predict the timing, frequency and duration of events at work, broadly defined as predictability [38]. Although not yet explored in the context of SMHS, different forms of predictability were associated with job satisfaction and inversely with depersonalisation and emotional exhaustion in human service and general

healthcare settings [49–51].

2.3.2 External and internal resources

Consistently with the demand-control-support model [30], social support can be conceptualised as the external resource [52, 53], which, when depleted, can result in a prolonged strain and burnout [54, 55]. Peer support and supervision are the most commonly used coping strategies within SMHS [29, 56, 57]. Not surprisingly, some researchers suggested social support to be particularly important for staff working within the secure settings while preventing physical violence and reassuring staff about their safety [3,4]. Nevertheless, the existing literature provides rather contradictory results with some research reporting significant interaction effects for social support, job demands or locus of control in their relationship to work stress [22, 58, 59] and others reporting no interaction effects [17]. Although informative, these results are limited to general and thus, non-secure intellectual disability settings. Studies in forensic mental health settings report significant contribution of social support in predicting job satisfaction and burnout but do not explore the indirect effects of social support [7, 8, 34]. Conceptually, the opportunities associated with social interactions could moderate and enhance one's sense of control, predictability and understanding, and decrease the risk of perceiving others as objects (depersonalisation) or dismissing personal accomplishments. Currently however, very little is known on how social support interacts with job demands (or any other internal resources) while altering their relationship with burnout and job satisfaction in SMHS. In the context of the cognitive appraisal model [36, 37], the perception of

predictability, control and understanding becomes a post-cognitive phenomenon- an interpretation of job demands, where the subjective experience is translated by the underlying internal resources. However, a paucity of research has explored the role of internal (including psychological) resources which could explain how the perception of job demands affect burnout and job satisfaction within the SMHS. Two conceptual phenomena of psychological mindedness and psychological flexibility appear as candidates worthy further investigation in addressing this gap.

2.3.3 Psychological mindedness

The construct of psychological mindedness (PM) has originated in relevance to psychodynamic psychotherapy [60]. It was initially used to conceptualise a form of a personal quality and an overall suitability ensuring better response to treatment in psychotherapy [61, 62]. Throughout the years, the research on personality traits and cognitive styles associated with psychological mindedness revealed positive associations with personal openness to experience, extraversion, realistic thinking, ambiguity tolerance and an internal locus of control [63, 64]. This led researchers to suggest that psychological mindedness should not be categorised as a trait or a cognitive style but rather "a cognitively toned personality variable" [64] p. 567]. It was therefore proposed that psychological mindedness was more amenable to change in improving "proclivity to mentalise" [65] p. 58] defined as the capacity to interpret human behaviour in terms of intentional mental states including beliefs, reasons, feelings, needs, goals and purposes. The most popularized definition of psychological mindedness to date refers to "an insight to see relationships among thoughts, feelings, and actions, with the goal of learning the meaning and causes of experiences and behaviour" [66] p.36]. However, more recent developments on this definition highlight

two essential components of an overall attitude (interest) in learning the meaning and causes, and skill (ability for insight) [67]. Conceptually, an interest in learning the meaning and the ability to achieve an insight may affect how an individual interprets demands at work and how they respond in terms of burnout or job satisfaction. The existing empirical evidence reveal that both of these components can be affected and modified during therapy [68–70] and thus, it is important to evaluate whether psychological mindedness could be a potentially valuable point of intervention in clinical and organizational practice. A number of inherent characteristics associated with psychological mindedness including increased self-awareness, empathy, mindfulness or self-actualisation [71, 72] may facilitate adaptive coping style [64] and mental well-being [73]. Considering that psychological mindedness has been associated with case formulation skills and the ability to form therapeutic alliance [74, 75], it is surprising that only one small study (n=50) evaluated its relationship with burnout among staff working with individuals experiencing psychosis and as a result, revealed significant negative associations [76]. Consequently, it appears that despite a promising amount of evidence suggesting a potential protective function of psychological mindedness, this role is yet to be evaluated in the context of the relationship between job demands, burnout and job satisfaction.

2.3.4 Psychological flexibility

Psychological flexibility is a concept introduced by the Acceptance and Commitment Therapy (ACT) [77]. Within the context of this therapeutic tradition, psychological flexibility has been identified as a core psychological ability which may be developed through psychological therapy [78, 79]. The Acceptance and Commitment Therapy is often described as belonging to the third-wave Cognitive-

Behaviour Therapies [79] but representing greater sensitivity to functions and context of the psychological phenomena [80]. Psychological flexibility has been defined as an ability to "stay with one's thoughts and feelings in the present moment without needless defence, and, depending on what the situation affords, changing or persisting with behaviour in the pursuit of goals and values" [81]. Thus, psychological flexibility could be conceptualised as another valuable internal resource. Conversely, psychological inflexibility is characterised by the difficulties in connecting to internal states or problems with choosing committed actions in line with one's values and in the situational context [77].

Within the frame of the Acceptance and Commitment Therapy [77], psychological flexibility is maintained and facilitated by a number of psychological skills and processes. Hayes and colleagues [79] distinguish two main groups of overlapping and interrelated processes which determine the degree of psychological flexibility. The first group involves mindfulness/acceptance and the second group involves commitment/behaviour [79]. The first group of processes is characterised by mindfulness- the contact with the present moment, acceptance of whatever one is experiencing [82], contextualised and unattached sense of self [79] and changing how one relates to thoughts through cognitive defusion- defined as distancing from the content and the literal meaning of language [83]. The second group of processes focuses on changing behaviour through patterns of committed action and in line with one's life values [79]. These two groups of processes facilitate and define individuals overall psychological flexibility, which may have an adaptive function expressed in how one responds to job demands and their own experiences of burnout or job satisfaction. While this hypothesis is relatively novel, it should not be surprising

given the preliminary findings on the protective role of psychological flexibility within the organisational context. Across a broad spectrum of institutional settings, higher levels of psychological flexibility were associated with better mental and physical well-being including lower probability of having a psychiatric disorder [84–86], proclivity to innovate [87], better social and emotional functioning [88], and greater ability to effectively notice and respond to goal-related opportunities [89]. A number of studies identified the role of psychological flexibility in reducing burnout and stigmatizing attitudes [90, 91], as well as mediating the relationship between a variety of coping styles (cognitive reappraisal, avoidance, controllability and/or fusion with one's internal states) and psychological distress [18] mood disorders [92] or burnout [93]. While these findings are promising, none of the research to date investigated whether they can be generalized to the specialist work settings of SMHS. This pattern is also apparent across the intervention studies. Although numerous studies report that the interventions aimed at increasing psychological flexibility led to reduction in psychological distress and burnout in staff working within the ID settings [94–97], none of these have been applied within the organisational settings of forensic service. To the best of our knowledge, not a single study has yet investigated the mediating effects of psychological inflexibility on the relationship between perceived job demands (control, understanding and predictability) and potential outcomes (burnout and job satisfaction) in the context of SMHS. This, in turn, highlights an overall gap in the existing literature and a lack of comprehensive models investigating indirect effects of internal (psychological flexibility, psychological mindedness) alongside the external resources (social support).

2.3.5 Aims and rationale

This study seeks to address the gaps and limitations in the existing literature within the SMHS. Two aims were distinguished to achieve this. First aim was to explore the relationship between subjectively perceived job demands (understanding, predictability and control) referred to as independent variables (IVs), the dependent variables (DVs) of burnout (emotional exhaustion, depersonalisation, personal accomplishment) and job satisfaction, and three other theoretically sound variables (social support, psychological mindedness and psychological inflexibility). Second aim was to explore the potential moderating effects of social support (SS) and mediating effects of psychological mindedness (PM) and psychological inflexibility (PI). Subsequently, a research question was specified as follows:

What are the direct and indirect effects of job demands (understanding, predictability and control), psychological inflexibility, psychological mindedness and social support on job satisfaction and the individual burnout dimensions?

2.4 Methods

2.4.1 Participants

A potential pool of 399 participants was identified for this study. Participants included English speaking staff currently employed by the regional board in the National Health Service (NHS) in Scotland and working in secure forensic (58.65%) or intellectual disability (ID) services (41.35%), which provided care to adult patients with mental-health problems.

2.4.2 Procedure

Participants were invited to the study by letter at a first stage, and if they showed interest in participating they were then provided with full information and informed consent forms (both available in paper or electronic format). The questionnaires were distributed to staff members either by the Chief Investigator or by the team leaders within their service. Sealed envelopes with anonymous responses were returned to collection boxes located on the premises of individual units. These were collected by the researcher 4 to 6 weeks later and yield 199 returns and 49.87% response rate; 121 from forensic (51.7% response rate) and 78 (47.27%) from ID services. Response rates were comparable to previous studies in the United Kingdom (UK) [23]. Full Ethical approval was obtained from the University of Edinburgh (Approval No: 14/GA/116) along with the formal acknowledgement of the project from the East of Scotland Research Ethics Service.

2.4.3 Materials

A cross-sectional design was used with all participants completing 6 standardised and validated questionnaires, and a questionnaire asking them about a set of demographic variables (Appendix 4).

The Understanding, Predictability and Control Scale [38] is a 12-item questionnaire designed to assess the degree to which an employee can understand why events happen -understanding, can predict the duration and/or timing of the work-related events-predictability, to what extent one can control the work-related outcomes and events- control [3]. The scale is a recommended by the National Institute for Occupational Safety and Health [98]as a best practice tool used for measuring psychosocial stressors at work [99]. Cronbach's reliability coefficient was reported at .85 with good test- retest reliability [38, 100].

Burnout was measured with the 22-item Maslach Burnout Inventory (MBI)-Human Services Survey [12] which includes 3 subscales of emotional exhaustion (EE); feelings of being drained of resources and energy, depersonalisation (DP); negative responses in attitudes towards service users and lack of personal accomplishment (PA) defined as tendency to evaluate one's work as insufficient [101]. The higher scores on EE and DP and lower scores on PA indicate higher levels of burnout. The MBI is considered as most widely validated across the multitude of samples including the acute inpatient mental health settings, with good internal consistency across the studies ranging between .71 to .91 for the 3 sub-scales and test-retest reliability of.54 to.60 [8, 102–104].

The 16-item job satisfaction (JS) scale [105] has been originally developed as a

part of a broader measure of work attitudes and aspects of psychological well-being and has been validated in acute in-patient mental health work settings [39, 106]. The measure assesses the extent to which individual reports satisfaction with intrinsic and extrinsic features of their job. The total job satisfaction score was calculated by summing all the items and accordingly with the most recent research supporting the use of the total score [39, 107]. The JS scale has been cross-culturally validated and showed good internal consistency with Cronbach's alphas being reported as ranging from .84 to .96 for the full scale [105, 108]. The most recent research support the continued use of the overall job satisfaction score [107].

Psychological mindedness (PM) was measured with the Balanced Index of Psychological Mindedness (BIPM) [67]. The BIPM is a 14-item self-report scale with measuring Interest (in attending to one's internal phenomena, particularly feelings) and measuring Insight (lack of insight into these phenomena). The total PM score was calculated by combining both subscales, where a higher score reflect a higher interest, insight, and an overall higher psychological mindedness [67]. The instrument showed good internal consistency (Cronbach's alphas of .85 and .76 reported for both subscales), test-retest reliability (r= .63 and .71 respectively), and construct validity with $r > .40$ among the related constructs of self-awareness, perceived emotional intelligence and self-reflection [67]. Considering that the PM scale has not yet been used in the UK, it is important to consider potential limitations when interpreting the results.

Psychological Inflexibility (PI) was measured with the Acceptance and Action Questionnaire-II (AAQ-II) (64). The AAQ-II is a 7-item and 1-factor scale

assessing the uni-dimensional construct referred to interchangeably as experiential avoidance and psychological inflexibility [81]. The AAQ-II assesses one's ability to contact fully the present moment accordingly with the formerly described definition. Recent factor analyses confirm the unidimensional nature of the AAQ-II [109] and support the continued use of the total PI score, which can be calculated by summing up individual scores. The higher score indicates higher PI. The instrument was validated among the UK employees of a large governmental department and the ID support staff while showing good internal consistency with Cronbach's alphas ranging between .78 to .92 and test-retest reliability of .81 and .79 [18, 81, 93].

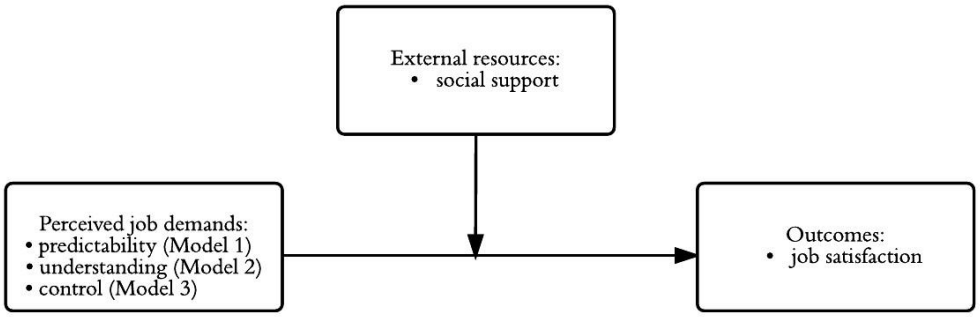
Social Support (SS) was being measured with the Social Support Questionnaire (SSQ) [110], designed to assess the extent to which one perceives to be emotionally and instrumentally supported. The SSQ distinguishes different sources of support including personal and professional support provided by supervisors, co-workers, spouses/partners and relatives/ friends. The total score was calculated by summing up individual scores across the 4-items; 2 items relating to all four sources of support, 1 item relating to two job-related sources (supervisors and co-workers) and 1 item asking the participants to rate the "truthfulness" of the statements [111]. The higher the summed score, the more social support is available to the individual [110]. The SSQ has been cross-culturally validated in acute mental-health settings and showed good internal consistency with Cronbach's alphas ranging between .72 to .93 and test-retest reliability of .44 to .60 for all the sub-scales [39, 103, 111, 112].

2.4.4 Data Analysis

Data was analysed using SPSS 21. Missing data was under 5% for all the variables and cases, and Little MCAR test revealed the data to be missing completely at random. After excluding one case due to >20% of missing data, mean substitution was used for missing values [113, 114]. Preliminary analyses indicated no violation normality for all variables except for understanding, control, JS and PA (negatively skewed). Given that skewness and non-normality has little impact on sample sizes over 100 participants the untransformed data was used [114].

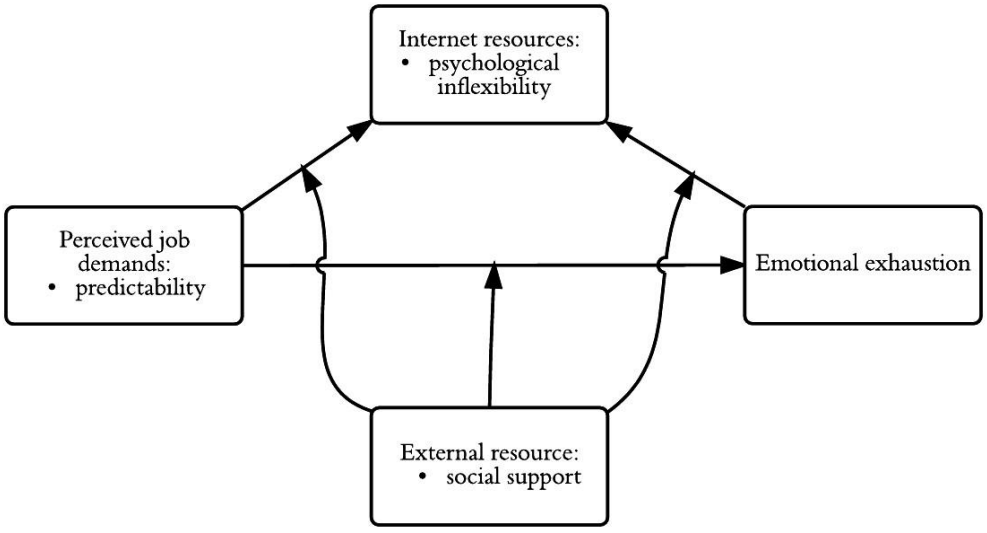
Comparisons between the participants working in the forensic and ID services were investigated with a number of independent samples t-tests. Bi-variate correlations and hierarchical regression analyses were used to explore the relationships between the variables, the overall predictive power and the cumulative strength of the individual predictors. None of the correlations were strong enough (>.8) to suggest issues of collinearity [115], which was confirmed by the evaluation of Tolerance and Variance Inflation Factors [116]. In order to allow exploration and comparison between multiple indirect effects, a series of moderation (Figure 2), moderated-mediation (Figure 3) and mediation (Figure 4) analysis outlined by Hayes [117–119] were used.

Figure 2. Conceptual representation of the moderation analyses.



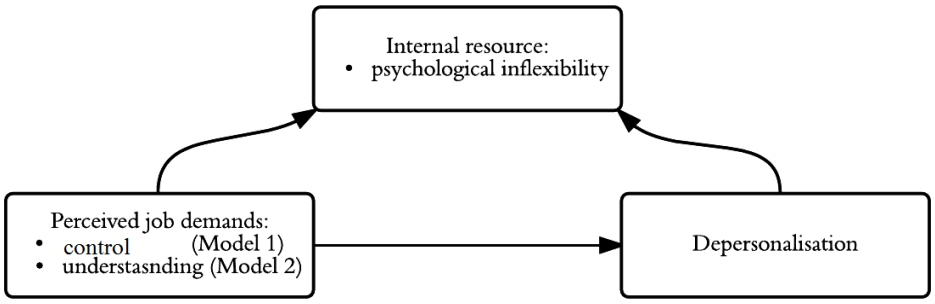
Note; Independent Variable: IV, Dependent Variable: DV, Model 1= predictability (IV)-social support (moderator)- job satisfaction (DV), Model 2= understanding (IV)-social support (moderator)- job satisfaction (DV), Model 3= control (IV)-social support (moderator)- job satisfaction (DV).

Figure 3. Conceptual representation of the moderated-mediation analysis.



Note; Independent Variable: IV, Dependent Variable: DV, Model: predictability (IV)- social support (moderator)- psychological inflexibility (mediator)- emotional exhaustion (DV).

Figure 4. Conceptual representation of the mediation analyses.



Note; Independent Variable: IV, Dependent Variable: DV, Model 1= control (IV)-psychological inflexibility (mediator)- depersonalisation (DV), Model 2= understanding (IV)-psychological inflexibility (mediator)- depersonalisation (DV).

2.5. Results

2.5.1 Demographic details

The initial sample consisted of 198 participants; 77 men (38.9%) and 120 women (60.6%) and one person who did not state their gender. The majority of the sample worked shifts (69.9%) within in-patient settings (81.1%) and included nurses (74.7%). More detailed demographic details are provided in (Table 5).

Table 5: Demographic details.

Variable	%	N	SE	SD
Age:			.087	1.219
20-29	21.8	43		
30-39	16.8	33		
40-49	29.4	58		
50-59	27.9	55		
60-69	3.0	6		
70 and above	1.0	2		
Post duration:			.123	1.729
< 1 year	17.3	34		
1-3 years	37.1	73		
4-6 years	14.2	28		
7-10 years	8.6	17		
11-15 years	4.6	9		
16 years or more	18.3	36		
Education level:			.104	1.45
O grade/GCSE or equivalent	23.6	46		
A Level/higher/SYS or equivalent	10.8	21		
HND/HNC or equivalent	21.5	42		
Degree; College, Bachelors or equivalent	36.9	72		
Higher Degree; MA/ MSc/ PHD	6.7	13		

Patient contact:			.162	2.277
<2 hours	4.1	8		
2-5	6.6	13		
5-10	12.2	24		
10-15	8.1	16		
15-20	4.6	9		
20-25	10.2	20		
25-30	17.8	35		
>30	36.5	72		
Professional group:			.099	1.386
Nursing	74.7	145		
Medicine	4.6	9		
Administration/Clerical	2.1	4		
Allied Health Professions	12.9	25		
Psychology	3.6	7		
Anicillary; security, domestic, reception	1.5	3		
Other	.5	1		
Variable	**Range**	**Mean**	**SE**	**SD**
Commute	0-200 miles	23.201	2.124	29.579
Sick days	0-120 days	5.286	1.082	14.995
Years qualified	0-57 years	15.576	1.153	13.791

Due to potential differences in work experiences across professional groups and a low number of participants from professional disciplines other than nursing (n=53), it was decided that only the nursing group would be retained for further analyses. Nursing staff identified as working within the Intellectual Disabilities Assessment Care Unit (n=4) were also excluded from further analyses due to the likely differences in the nature of this organisational environment (e.g., duration of patient stay, staffing ratios). The final sample therefore consisted of 141 nursing professionals; 37.6% (n= 53) working in the Intellectual Disability and 62.4% (n= 88) in Adult Forensic Mental Health settings. In response to this, the post-hoc power was calculated using G-Power Software package and revealed an adequate power at .810 (power ≥ .80) to detect a medium effect size at a significant level (p= .05) with a sample of 141 participants.

2.5.2 Group differences and relationships

Comparisons between the groups of participants working in ID and Adult Forensic Mental Health were investigated with a number of independent samples t-tests. The overall results revealed significant differences between the groups across three demographic variables; the commuting distance to and from work (t (139)= -2.789, p= .006), the number of reported sick days in the last 6 months (t (139)= 3.404, p= .001) and the number of years post-qualification (t (139)= 3.341, p= .001). Thus, ID nurses reported significantly higher numbers of sick days (M=11.59, SD=22.69), as well as being qualified for significantly longer since the completion of their professional training (M=18.77 years, SD=12.61). Forensic nurses reported commuting to and from work for significantly longer distances (M= 26.80 miles,

SD=33.59) when compared to the ID nurses (M= 12.95, SD=17.17).

Significant differences were also found across job demands; understanding (t (139)= -3.216, p= .002), predictability (t (139)= -2.679, p= .008) and control (t (139)= -4.214, p= .000), psychological mindedness (t (139)= -4.151, p= .000), psychological flexibility (t (139)= 2.258, p= .025) and social support (t (139)= -4.779, p= .000). Thus, forensic nurses presented with statistically higher means for understanding (M=15.12, SD=3.29), predictability (M=11.58, SD=3.09), control (M=26.15, SD=7.75), psychological mindedness (M=67.68, SD=10.37) and social support (M=32.65, SD=5.23) and lower means for psychological inflexibility (M= 14.15, SD= 7.17). With regards to burnout and job satisfaction, the ID nurses presented with statistically higher means of emotional exhaustion-EE (t (139)= 2.601, p= .010; M= 21.32, SD=14.30), and lower levels of job satisfaction (t (139)= -6.320, p= .000; M= 60.52, SD=21.26) when compared to the forensic group. There were no significant differences between forensic (M= 4.88, M=32.61) and ID staff (M=5.96; M=33.55) in their respective scores of depersonalisation (DP) and personal accomplishment (PA). Despite some evident differences between the groups of ID and Forensic nurses, a decision was made to combine them for the purpose of regression analysis due to the relatively low numbers that would result from separate analyses. However, it is acknowledged that this analysis should be considered as exploratory.

For the purpose of further analyses including an exploration of the relationships between all the variables, both groups of ID and forensic staff were combined. The

Pearson's Correlation Coefficients were reported in Table 6. As a result, not all the IV- DV relationships were statistically significant. All the IVs (understanding, predictability and control) were significantly associated with JS and EE, and ranging in strength from moderate to strong. These results indicated that higher scores on all the IVs were associated with greater JS and lower EE. The DP dimension was significantly associated with predictability and control, indicating that higher predictability and higher control were associated with lower DP. Out of all the job demands, only understanding was significantly associated with PA, indicating that higher understanding was associated with greater PA.

Table 6. Bi-variate Correlations among study variables.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
1.Predictability	-								
2.Understanding	.355**	-							
3.Control	.264**	.609**	-						
4.PM	.131	.168*	.125	-					
5.PI	-.140	-.349**	-.275**	-.216*	-				
6.SS	.254**	.326**	.409**	.111	-.364**	-			
7. JS	.399**	.565**	.668**	.219**	-.315**	.549**	-		
8.EE	-.358**	-.373**	-.371**	-.128	.464**	-.411**	-.552**	-	
9.DP	-.186*	-.073	-.203*	-.142	.336**	-.277**	-.335**	.583**	-
10.PA	-.013	.168*	.094	.246**	-.193*	.109	.086	-.085	-.079

*Note; P*sychological Mindedness: PM, Psychological Inflexibility: PI, Social Support: SS, Job Satisfaction: JS, Emotional Exhaustion: EE, Depersonalisation: DP, Personal Accomplishment: PA, * $p \leq 0.05$, ** $p \leq 0.01$.

The PM variable was significantly associated with JS and PA, suggesting that higher scores on PM were associated with greater positive outcomes but any other DVs. Psychological inflexibility (PI) was significantly associated with the positive (JS, PA) and negative outcomes (EE, DP). Social Support was significantly associated with the positive (JS) and negative outcomes (EE, DP) but was not significantly associated with personal accomplishment (PA). These results indicate that higher PI was associated with greater negative and lower positive outcomes. Higher SS scores showed a reversed pattern of lower negative and greater positive outcomes. The PM-PI and PI-SS were the only significant mediators/moderator relationships.

2.5.3 Hierarchical regression analyses

Table 7 provides an overview of the results of four hierarchical regression analyses (one for each of the DVs). A decision was made to include demographic variables showing significant correlations with the DVs in this or prior studies. These were entered simultaneously at Step 1. Predictors or IV's (understanding, predictability and control) were entered simultaneously in Step 2. All the hypothesised mediating or moderating variables (PM, PI, SS) were entered into the regression equation simultaneously at Step 3. All steps used the "enter" method.

Table 7. Summary of the predictors identified by four hierarchical regression analyses (one for each of the DVs).

Variable	Step 1			Step 2			Step 3		
	β	95% Lower -Upper CI		β	95% Lower – Upper CI		β	95% Lower -Upper CI	
Model 1: JS									
Demographics:									
Lower education	-.615	-66.133	14.605	-.055	-32.476	27.837	-.341	-43.348	14.763
Higher education	-.758	-72.662	8.887	-.094	-34.480	26.579	-.381	-45.300	13.210
Not working shifts	.236	2.877	28.590	.054	-6.207	13.367	.054	-5.442	12.633
Patient contact <16h	.061	-6.375	12.379	.022	-5.734	7.873	.041	-4.283	8.363
Post duration <6 years	-.020	-41.555	39.746	.343	-14.553	44.912	.450	-7.533	47.410
Post duration >7 years	-.061	-43.242	37.797	.237	-19.070	40.163	.374	-10.753	44.105
Commute	.102	-.048	.191	-.033	-.112	.066	-.031	-.104	.060
Sick days	-.055	-.292	.147	-.012	-.179	.148	-.010	-.164	.137
Years qualified	-.095	-.524	.191	-.013	-.285	.239	-.033	-.303	.188
Job demands:									
Predictability				.207**	.443	2.048	161*	.220	1.717
Understanding				.181*	.107	1.762	.150*	.003	1.553
Control				.493**	.804	1.603	.382**	.544	1.320

Resources:							.075	-.081	.357
PM							.011	-.279	.333
PI							.309**	.568	1.408
SS									
R^2 change			.101			.439**			.079**
Model 2: EE									
Demographics:									
Lower education	.513	-11.500	37.057	.242	-16.241	28.276	.406	-11.334	31.586
Higher education	.772	-5.219	43.826	.424	-11.928	33.140	.558	-7.661	35.554
Not working shifts	-.064	-10.264	5.200	.039	-5.664	8.783	.023	-5.773	7.577
Patient contact <16h	.043	-4.386	6.894	.073	-2.887	7.157	.083	-2.234	7.106
Post duration <6 years	.408	-13.702	35.194	.212	-16.370	27.521	.110	-17.383	23.197
Post duration >7 years	.421	-13.233	35.506	.273	-14.640	29.080	.095	-17.747	22.771
Commute	-.027	-.083	.061	.056	-.042	.089	.039	-.044	.077
Sick days	-.025	-.152	.112	-.035	-.148	.093	-.046	-.147	.075
Years qualified	.028	-.186	.244	-.037	-.232	.155	.017	-.164	.199
Job demands:									
Predictability				-.236*	-1.437	-.253	-.202*	-1.276	-.170
Understanding				-.091	-.891	.331	-.010	-.606	.543
Control				-.292*	-.718	-.128	-.184	-.554	.019

Resources:									
PM							-.018	-.181	.142
PI							.298**	.199	.651
SS							-.176*	-.646	-.025
R^2 change			.079			.211**			.121**
Model 3: DP									
Demographics:									
Lower education	-.618	-17.708	3.851	-.679	-18.301	3.081	-.731	-18.857	2.479
Higher education	-.463	-16.095	5.681	-.527	-16.745	4.902	-.583	-17.298	4.185
Not working shifts	-.104	-5.276	1.589	-.043	-4.239	2.700	-.050	-4.214	2.422
Patient contact <16h	-.017	-2.735	2.273	-.005	-2.472	2.352	.014	-2.133	2.510
Post duration <6 years	-.197	-13.186	8.523	-.281	-13.862	7.219	-.378	-14.566	5.607
Post duration >7 years	.011	-10.689	10.951	-.026	-10.805	10.194	-.180	-12.218	7.924
Commute	-.016	-.035	.029	.015	-.029	.034	.013	-.028	.033
Sick days	-.033	-.070	.047	-.035	-.070	.045	-.040	-.069	.041
Years qualified	-.209*	-.193	-.002	-.266*	-.217	-.031	-.244	-.204	-.024
Job demands:									
Predictability				-.178*	-.517	-.002	-.143	-.505	.045
Understanding				.211	-.003	.584	.290*	.114	.685
Control				-.309*	-.343	-.060	-.250*	-.305	-.020

Resources:									
PM							-.141	-.149	.011
PI							.230*	.035	.260
SS							-.094	-.235	.074
R^2 change			.103			.087*			.090*
Model 4: PA									
Demographics:									
Lower education	-.320	-23.138	11.708	-.050	-18.705	16.917	.167	-15.085	21.035
Higher education	-.357	-24.000	11.196	-.063	-19.162	16.901	.126	-15.921	20.448
Not working shifts	-.151	-9.824	1.274	-.206	-11.624	-.063	-.212	-11.625	-.390
Patient contact >16h	.174	-.365	7.729	.172	-.394	7.643	.154	-.689	7.171
Post duration <6 years	.113	-15.419	19.670	.247	-12.892	22.229	.335	-10.757	23.394
Post duration >7 years	.083	-15.913	19.063	.221	-13.295	21.690	.332	-10.743	23.356
Commute	.079	-.028	.075	.040	-.040	.064	.024	-.044	.058
Sick days	.138	-.017	.172	.173*	.001	.193	.168*	.001	.188
Years qualified	.168	-.029	.279	.159	-.037	.273	.174	-.023	.283
Job demands:									
Predictability				-.118	-.775	.173	-.153	-.859	.072
Understanding				.172	-.110	.868	.114	-.234	.733
Control				.079	-.154	.318	.068	-.170	.312

Resources:					
PM			.253*	.062	.334
PI			-.078	-.270	.110
SS			.041	-.205	.317
R^2 change	.078	.038			.072*

Note; Standardised Beta Coefficient: β, Lower/Higher Confidence Intervals: LowerCI/ UpperCI, Total variation explained by the model change: R^2 change, Job Satisfaction: JS, Emotional Exhaustion: EE, Depersonalisation: DP, Personal Accomplishment: PA, Social Support: SS, Psychological Inflexibility: PI, Psychological Mindedness: PM.* $p \leq 0.05$, ** $p \leq 0.01$.

With regards to job satisfaction (JS), the overall model was able to explain 57.2% (adjusted R^2= .572) of variance (F (15, 125) = 13.497, p = .000). Consistently with correlational results, all the job demands (understanding, predictability, control) were significant positive predictors of JS. Social Support (SS) made the only significant contribution to JS (β= .309, CI: .563 to 1.408) while psychological inflexibility (PI) and psychological mindedness (PM) did not. For the emotional exhaustion (EE) outcome, the model explained 34% (adjusted R^2=.340, F (15, 125) = 5.799, p = .000) of the variance. PI was the strongest (β= .298, CI: .199 to. 651) out of all the significant predictors of EE (predictability, SS and PI). The variance in depersonalisation (DP) was explained in 19.4% (adjusted R^2 =.194, F (15, 125) = 3.244, p = .000) where understanding, control and PI were the only significant predictors. Demographic variables remained insignificant in all models, except the personal accomplishment (PA) model which revealed sick days (β= .168, CI: .001 to .188) and PM (β= .253, CI: .062 to .334) as the significant predictors contributing to 9.1 % of variance explained (adjusted R^2 =.091, F (15, 125) = 1.930, p = .026). None of the job demands (predictability, understanding, control) have significantly contributed to the overall proportion of variance explained by the PA model. Change statistics (Table 2) for Steps 2 and 3 were significant across all the models except the PA model where change statistics were only significant at Step 3.

2.5.4 Moderation, moderated-mediation and mediation analyses

Considering that none of the likely mediators was a significant predictor of job satisfaction (JS), only the moderation effects of SS (social support) were tested in three

simple moderation models (Figure 2-one for each IV). Table 8 shows that none of the moderation models were significant as all the CIs contained zero values.

Table 8. Moderation regression analyses for job satisfaction.

Interaction	Coefficient (b)	SE	t	P	Lower – Upper CI
Moderation outcome: JS					
Model 1: IV= Predictability					
SS x Predictability	.010	.055	.192	.848	-.097 .118
R^2= .374 , F(3, 137)= 27.327			p=.000		
Model 2: IV= Understanding					
SS x Understanding	-.028	.057	-.493	.623	-.142 .085
R^2= .470 , F(3, 137)= 38.437			p=.000		
Model 3: IV= Control					
SS x Control	-.015	.017	-.921	.359	-.048 .017
R^2= .540, F(3, 137)= 70.387			p=.000		

Note; Regression Coefficients: Coefficient (b), Standard Errors: SE, P-value: P, Lower/Higher Confidence Intervals: Lower- Upper CI, Independent Variable: IV, Job Satisfaction: JS, Social Support: SS, Total variation explained by the model: R^2.

Regression analyses disclosed that only predictability out of all job demands was a significant predictor of emotional exhaustion (EE), along with social support (SS) and psychological inflexibility (PI). Consistently, the effects of both (PI and SS) were explored through the moderated-mediation model (Figure 2). Firstly, we explored whether SS moderated predictability-EE relationship (a). Secondly, we explored whether SS moderated the mediation between predictability and PI (b), and between PI and EE (c). Although the overall model predicted a significant proportion of variance; R^2= .344, F (5, 135) = 25.361, p=.000, neither interaction between psychological inflexibility (PI) and social support (SS) (b= -.005, p=.729, CI: -.032 to .022) and predictability and SS (b= -.016, p=.724, CI: -.107 to .075) were significant. The direct and indirect effects (Table 9) suggest that both, high and low levels of SS had a direct effect on the predictability-EE relationship. Bias-corrected bootstrap CIs revealed insignificant indirect effects at high and low levels and thus, indicated that SS did not exert a significant moderation of the mediation effect on the predictability-EE relationship through psychological inflexibility (PI).

Table 9. Direct and in-direct effects of moderated-mediation analyses for the outcome of emotional exhaustion.

Point Estimate	Effect	SE	t	P	Lower - Upper CI**	
Direct effects						
SS High	-1.035	.520	-1.993	.048*	-2.063	-.008
SS Low	-.827	.408	-2.025	.045*	-1.634	-.019
Interaction	Effect	SE			Lower - Upper CI**	
Indirect effects						
PI x SS High	.015	.150	-	-	-.284	.311
PI x SS Low	-.118	.156	-	-	-.414	.187

Note; Model: predictability (IV)- social support (moderator)-psychological inflexibility (mediator)- emotional exhaustion (DV). P-value: P, Standard Errors: SE, Lower/Higher Confidence Intervals: Lower – Upper CI, Emotional Exhaustion: EE, Social Support: SS, Psychological Inflexibility: PI, **Bootstrapped coefficient intervals, * $P \leq 0.05$.

The results of regression analyses for depersonalisation (DP) revealed only three significant predictors; understanding, control and psychological inflexibility (PI). Consequently, only the mediation effects of PI were explored in two simple mediation models for control and DP (Model 1), and understanding and DP (Model 2). Both models (Table 10) confirmed that PI was a significant independent predictor and explained a significant proportion of variance in DP. In both instances, control and understanding became insignificant when PI was added to the model. Bias-corrected bootstrap CIs for the indirect effects did not contain zero in both instances. These results indicate significant mediation effects from control to DP through PI (Model 1) and from understanding to DP through PI (Model 2). Personal

accomplishment (PA) model was not included in further analyses due to lack of significance across the hypothesised predictors (job demands, psychological inflexibility or social support).

Table 10. Mediation regression analyses

Predictors	Coefficient (b)	SE	t	P	Lower - Upper CI**
Mediation Outcome: DP					
Model 1: IV= Control					
Constant	4.156	1.917	2.168	.032	.336 7.946
PI	.194	.059	3.306	.001*	.078 .311
Control	-.078	.059	-1.330	.186	-.194 .038
R^2 =.126, F (2, 138) = 7.272				p=.001*	
Model 2: IV= Understanding					
Constant	.789	3.009	.262	.794	-5.162 6.739
PI	.227	.072	3.132	.002*	.084 .370
Understanding	.070	.157	.446	.656	-.241 .381
R^2 =.115, F (2, 138) = 6.562				p=.002*	
Mediator	Indirect Effect	SE			Lower - Upper CI**
Model 1: IV= Control					
PI	-.054	.027			-.123 -.014
Model 2: IV= Understanding					
PI	-.170	.074			-.356 -.059

Note; Regression coefficients: Coefficient (b), Standard Errors: SE, P-value: P, Lower/Higher Confidence Intervals: Lower CI/ Higher CI, Independent Variable: IV, Depersonalisation: DP, Psychological Inflexibility: PI, Total variation explained by the model: R^2, ** Bootstrapped coefficient intervals, *P ≤ 0.05.

2.6 Discussion

The present study aimed to explore the direct and in-direct relationships between subjectively perceived job demands (understanding, predictability and control), burnout dimensions (emotional exhaustion, depersonalisation, and personal accomplishment), job satisfaction and three other theoretically sound variables (social support, psychological mindedness and psychological inflexibility). Two important findings were uncovered whilst addressing this aim. Firstly, understanding, predictability and control are all relevant to job satisfaction while their relevance changes across the burnout dimensions. Secondly, the role of social support and psychological inflexibility was the most prevalent significant finding across the analyses. In our exploration of the potential moderating and mediating effects, we have confirmed that psychological inflexibility mediated each of the relationships between two of the job demands (control and understanding) and depersonalisation. The role of social support however, appears to be the one of an independent predictor or a potential mediator.

Our initial exploratory analyses revealed a number of significant differences between the nursing staff working in Adult Forensic Mental Health versus Intellectual Disability (ID) services. The significant differences in the levels of understanding, predictability and control between staff groups indicate that such perceptions were not shared across the services. Our findings revealed that nursing staff in ID settings tend to report lower levels of understanding, predictability and control at work. While this may indicate that job demands may be more diverse and service specific, it appears that such differences co-occur alongside significantly higher levels of

psychological inflexibility and lower social support within the ID staff group. In contrast, forensic nurses within presented with significantly lower levels of psychological inflexibility, emotional exhaustion and higher levels of job satisfaction. These results are in line with previous literature reporting high morale and lower rates of emotional exhaustion in forensic compared to other acute mental health settings [34, 41]. The mean scores of the ID nurses in our sample however, place them within the high range of emotional exhaustion when compared to previous studies reporting scores within the moderate range for this group [22]. While it appears that the ID staff may be more emotionally exhausted, no significant differences were observed between forensic and ID staff placing them both within the average range for depersonalisation and personal accomplishment [120]. It also appears that staff working in forensic services report significantly higher levels of social support, psychological mindedness and psychological flexibility and thus, may be more likely to utilise or have an access to such resources. In comparison, the significantly higher rates of sickness among ID nurses may indicate a number of potential challenges with regards to staff health and effective service provision. This notion will be addressed further in this discussion while exploring possible organisational implications. Overall, the ID nursing staff appear to have reported more negative perceptions of job demands, lesser internal and external resources and more negative outcomes (increased emotional exhaustion and decreased job satisfaction). These findings seem to suggest that other factors such as social support or psychological inflexibility may be of help when trying to understand why these differences are observed.

Across the overall sample, we found our results to be consistent with the previous

empirical literature [7, 26, 34, 40–42] identifying control and social support as the strongest correlates and predictors of job satisfaction. Although understanding and predictability were only moderately associated with job satisfaction, all job demands (control, predictability, understanding) were individually significant when predicting a large proportion of variance (57.2%) in job satisfaction [121]. Contradictory to the demand-control-support model [30], social support did not moderate any of the individual relationships between job demands and job satisfaction. These findings are consistent with other studies [17, 94] reporting no indirect effects and suggest that while social support may not moderate, it may directly contribute to employees job satisfaction alongside subjectively perceived job demands.

Consistently with previous reports [34, 39] emotional exhaustion showed the strongest (albeit still moderate) association with job demands when compared to other burnout dimensions. Contradictory to the demand-control- support model [30], our findings revealed that out of all job demands, predictability (not control) was the only significant predictor of emotional exhaustion. These findings indicate that in the context of this study, whether participants perceived to have a control over their environment was not relevant to their experience of emotional exhaustion. Given that the predictive strength of job demands diminished in the final step of regression analyses, while the variance explained by the model increased (34 %) alongside the significant proportion of change (R change=.121), we posit the idea of the potential indirect effects for two significant predictors (social support and psychological inflexibility) to be tentatively supported.

The moderated-mediation analyses revealed direct effects of social support (at high and low levels) on the relationship between predictability and emotional exhaustion. However, our findings revealed no substantial estimated conditional effects for psychological inflexibility (across high and low levels of social support). Thus, social support did not moderate the mediation effects on the relationship between predictability and emotional exhaustion through psychological inflexibility. Direct effects at high and low levels of social support suggest that the variable may contribute rather than moderate this relationship with potential mediation effects yet to be explored in further research. Despite the lack of directly comparable models within the SMHS, other studies report consistent results with regards to the significant contribution of social support in predicting burnout [7, 8, 34].

Consistently with other researchers [122], we found depersonalisation to be weakly correlated with predictability and control. However, predictability became insignificant after entering other significant correlates and predictors (psychological inflexibility, social support) to the model. The final proportion of variance explained (19.4%) was small and revealed psychological inflexibility as the only significant predictor of depersonalisation out of all the remaining resources (SS or PM). Two individual mediation models substantiated our preliminary findings while uncovering substantial indirect effects of psychological inflexibility on the relationships between control and depersonalisation, as well as understanding and depersonalisation. Although we are limited by the lack of comparable studies in SMHS exploring the effects of psychological inflexibility on burnout through mediation or conditional process analysis [117], our findings are in line with the results reporting on the mediating role of psychological flexibility in decreasing

burnout and strain in staff working for large government organisation [93].

Contradictory to recent reports of significant relationships between psychological mindedness and three burnout dimensions among staff working with psychosis [76], our findings revealed that psychological mindedness was related to only one dimension of burnout- personal accomplishment. None of the job demands, social support or psychological flexibility was significant in predicting personal accomplishment suggesting that these variables were neither relevant nor suitable for further analysis of indirect effects. The final proportion of variance explained by the model was small (9.1 %) and revealed that psychological mindedness made the largest contribution to the significance of change (R change= .072). Interestingly, one demographic variable (sick days), was also a significant positive predictor of personal accomplishment. In practical terms such findings may suggest that a sense of personal accomplishment among the professionals working in secure services may depend on how insightful or interested they are in their thoughts, feelings, and actions (psychological mindedness). Considering this form the cognitive appraisal model's [38] perspective, it is possible that viewing sickness and days off work as undesirable but positive challenges which have been successfully overcome [33] could contribute to the sense of personal accomplishment.

2.6.1 Organisational Implications

The relevance of our findings may be considered from a broader organisational perspective with an aim to identify aspects of service which require further attention or improvement. Our findings suggest that staff perceiving their work as less

predictable may be more likely to experience emotional exhaustion. Conversely, staff with higher levels of understanding, control and predictability within their work are more likely to be satisfied with their job. This appears to be in line with the previous findings in acute mental health settings [39] and indicates that staff perception of such job demands is relevant to Secure Mental Health Settings (SMHS). In response, secure services may wish to consider monitoring and facilitating more positive perceptions of understanding, predictability and control shared by the staff. This may be of particular relevance to the ID services where staff report significantly lower levels across all of these aspects.

Our results tentatively suggest that social support and psychological flexibility may act as helpful psycho-social resources protecting against emotional exhaustion, depersonalisation and contributing to job satisfaction. Firstly, we found that any level of social support available has a direct effect on staff perceptions of predictability and its relationship with emotional exhaustion. As such, it appears that any level of social support (including minimal support) may affect the levels of emotional exhaustion while contributing positively to job satisfaction. From the organisational theory perspective, this may be explained by a number of social functions such as enhancing existing network ties, building new linkages, utilising socially shared resources within the community of workers and developing greater capacity for problem-solving within the institution [123]. This appears to be consistent with the social learning theory [124] and its application in a variety of nursing work settings [125]. Most recent research confirms that social environment within the institution plays a crucial function in reinforcing and modelling desirable beliefs, attitudes and behaviours, which may prevent or contribute to emotional

exhaustion [125]. As such, organisations such as the NHS share a responsibility for promoting and modelling perceptions and ensuring that employees have an access to helpful resources such as social support.

While the forensic nurses reported higher levels of social support, job satisfaction and lower levels of emotional exhaustion, these might have been affected by the social desirability bias or a phenomenon of group cohesiveness. This could be due to the process of questionnaire distribution across the forensic service which involved senior team leaders. It is therefore possible that the involvement of senior members of staff in recruitment has facilitated more positive responding through the process of social conformity. Our results also suggest that nursing staff working in the ID services may experience higher levels of emotional exhaustion, lower levels of job satisfaction and social support. While it is not possible to identify what types of social support were available to staff working in the ID services, it may be that they were less available or less established when compared to the forensic service. The significantly higher sickness rates among the ID nurses may also indicate a number of differences across the services with regards to how ‘’sickness’’ is managed and what means of support are available to staff who are unable to work. Unfortunately, it appears that secure mental health services vary in the provision of different forms of support ranging from informal structures to more formal supervision or skills training [126, 127]. We argue that this state of affairs requires further improvement and standardization on the national and individual service level.

The results of the 2015 annual review for the SMHS [108, 128] indicate that many services fail to provide the minimum requirements for managerial (34%) and clinical

(36%) supervision. It therefore appears that what is available to staff may largely differ across services and depends on interests of different stakeholders including governmental, executive and individual service initiatives. Thus, our findings suggest that services wanting to monitor job satisfaction or simply wanting to keep the levels of emotional exhaustion "in check"', need to consider adequate social support in a form of formal and informal resources such as supervision, peer support or reflective practice groups. While we acknowledge that literature on the evaluation of reflective practice groups is limited, the utility of such groups in the acute in-patient settings [129, 130] and ID services [131] appears promising. Thus, we suggest that further evaluation of reflective practice groups within the SMHS should be considered. We also propose that organisations should consider not only preventative but also responsive forms of support which could be of particular value to services with higher sickness rates.

Our results suggest that psychological inflexibility may explain the relationship between particular job demands (understanding and control) and depersonalisation. It also appears that psychological flexibility may act as a buffer which protects form depersonalisation and the impact of job demands. These findings may be particularly important in SMHS, where depersonalisation could present high costs to organisation, staff, service users and even the public. Although psychological flexibility may be considered as an internal resource, many organisational researchers acknowledge that corporate culture not only supplies but also models and promotes different types of resources and collective coping [132, 133]. As such, secure services may consider how to promote psychological flexibility through

interventions involving individual [77] and organisational applications of the Acceptance and Commitment Therapy [93, 134]. To help with this endeavour, we present a number of tentative hypotheses on how perceiving others as inanimate objects (depersonalisation) may be explained by psychological inflexibility and what processes may protect an individual from experiencing burnout. These ideas are explored in relevance to different clinical implications.

2.6.2 Clinical Implications

While we acknowledge that theorising about the mechanisms through which psychological flexibility affects burnout extends beyond our data, we hope to encourage a debate on potential clinical implications in occupational health settings. We also encourage practitioners who work clinically with staff experiencing burnout to consider future research exploring the processes discussed below.

Our results suggest that psychological inflexibility affects how one understands their work environment and how much control one perceives to have over it. This appears to be consistent with the framework of ACT [77] distinguishing a number of interlocking processes which may explain how psychological inflexibility affects how one relates to their internal psychological events and external work environment. Thus, we tentatively hypothesize that perceiving others as impersonal objects (depersonalisation) can be facilitated by two processes of rigid attachment to a particular self-concept, as well as entanglement with one's thoughts and beliefs-cognitive fusion [79]. Conceptually, both of these processes may limit the understanding of oneself and others by promoting social division, stereotypical or

uncritical thinking and limiting perspective-taking. This may be illustrated by an example when being attached to roles, titles or responsibilities associated with a particular self-concept, may impact on one's capacity to be more open, engaged, emphatic or compassionate towards oneself or others [135]. As such, we agree with a previous suggestion made by Atkins and Parker [136] that psychological flexibility training may be considered as helpful tool to increase organisational compassion.

Kashdan and Rottenburg [86] claim that the protective function of psychological flexibility is expressed in how one adapts to situational demands, reconfigures their mental resources, shifts their perspective and finally, how one balances competing needs, desires and life domains. Consistently, we propose that same internal processes of psychological flexibility may protect staff from depersonalisation and emotional exhaustion. The process of undertaking continuous efforts to evade or regulate one's internal events including difficult thoughts, feelings or bodily sensations (experiential avoidance), may detract from the resources at hand and thus, may reinforce the perceived lack of control [93]. In contrast, an acceptance of unwanted psychological events may facilitate the ability to conserve energy and allow more efficient use of emotional and cognitive resources [55]. This theoretical suggestion appears to be consistent with studies identifying unhelpful coping strategies of avoidance and wishful thinking to be associated with higher levels of burnout among the ID staff when compared to staff who did not adopt such strategies [17, 137].

An ability to change how one relates to their thoughts- cognitive defusion [89] may protect individuals from identifying with feelings or thoughts representing

depersonalisation by reducing the ‘’ believability’’ of such internal events [96]. In a similar manner, cognitive defusion may protect individuals from over identifying with overwhelming feelings leading to emotional exhaustion. The second group of processes of behaviour change may also have a number of protective functions. The ability to change one’s behaviour through patterns of committed action and in line with ones’ life values [79] may be of help in contexts of high job demands and in spite of a diminished sense of control or understanding. As such, psychological flexibility may facilitate effective behaviour in the presence of psychological states which are typically perceived as stressful [138] and without numbing or objectifying [139, 140]. This appears to be consistent with recent research reporting a significant decrease in emotional exhaustion and no increase in depersonalization among the participants attending the ACT group as compared to the control group [93]. Consequently, clinicians within the occupational health settings, training facilitators and researchers alike may continue to evaluate through the workings of which mechanisms psychological flexibility may protect staff from burnout.

2.6.3 Limitations and future research

Despite considerate strengths in adapting a more comprehensive model exploring both, the internal and external resources, several limitations of this study must be acknowledged. We recognise that the exclusion of professionals other than nursing staff affected the statistical power of our analyses. Although we have observed a decline in statistical power during our power calculation post-hoc, we have managed to retain the acceptable threshold of a conventional power level [141]. The significant

differences observed between nursing staff working in forensic versus ID services indicate that our sample may have been more heterogeneous. As such, future research may consider making further comparisons between these groups to identify service-specific disadvantages or effects characteristic for each speciality. Considering that no information was available on staff who did not participate in the study, it remains unknown to what extent the results were affected by the self-selection bias of staff who did participate. Considering the nature of psychological mindedness for example, it could be that participants' lack of interest or insight may be represented by disengagement from any form of self-evaluation, which could have prevented them from engaging in the study. Beyond practical difficulties of measuring unobservable constructs, the lack of validation of the BIPM scale [67] among the UK nationals and within the specific mental- health settings, may be a cause of concern.

We would also like to acknowledge the potential biases associated with the involvement of senior team member in the questionnaire distribution and the recruitment process. Thus, future research could consider more direct questionnaire distribution to improve participants' autonomy and minimize the probability of a self-presentation bias. Moreover, the hierarchical structure of the SMHS and the division of responsibilities according to different care roles, may have had an impact on the value placed on inter-professional work and thus, on the perceptions of social support within the multidisciplinary team [142]. Previous research suggest that different leadership styles can not only predict burnout among nurses [143] but can also mediate the relationship between depression and personal accomplishment [144]. While this study did not investigate the impact of leadership styles, further

research should consider such impact on different burnout dimensions and job satisfaction in SMHS settings.

The cross-sectional nature of the study also limited any causal conclusions and did not allow for the measurement of any perceptive changes over time. The lack of direct measurement of appraisal did not allow us to evaluate exactly how the participants appraised their job demands. The generalisability of our results may be also restricted to the specific regional context of SMHS. Thus, we encourage researchers to adapt a longitudinal research design and explore changes in appraisals made over time while incorporating a direct measurement of appraisal across a number of sites.

2.7 Conclusion

Our findings suggest that subjectively perceived job demands (understanding/ predictability/ control) are not redundant but are likely to follow individualised pathways through which they contribute to job satisfaction and burnout. We conclude that the pathways to job satisfaction, emotional exhaustion and depersonalisation may be of particular interest to researchers and professionals working in secure mental health settings. Thus, simultaneous testing of all the indirect pathways with the Structural Equation Modeling (SEM) could be used to expand upon our preliminary findings which identified two strongest candidates for such analyses; social support (1) and psychological inflexibility (2).

The significant roles of social support and psychological inflexibility are the most important conclusions of this study. The potential for social support to contribute to job satisfaction and diminish emotional exhaustion seems particularly important in the context of recent reports placing emotional exhaustion as the most common form of psychological strain within the acute mental health settings [34]. We also hope to encourage organizations and researchers to utilise social support as crucial but often an understated resource.

Out of the internal resources available to the individual, psychological flexibility appears to be the most significant. Our findings identify psychological inflexibility as mediating factor explaining how one's understanding and perceived control can contribute to the risk of depersonalisation. Thus, services wishing to protect staff and service-users from depersonalisation, may wish to consider various organisational applications of the Acceptance and Commitment Therapy [134] aimed at increasing psychological flexibility. Finally, we wish to encourage further interdisciplinary research within this specialist field including occupational, social and public health sciences.

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3. Appendices

3.1 Appendix 1a: Table illustrating the rating guidelines of the Quality Criteria.

Quality Criteria	**Ratings**
Introduction and literature review *1. Rationale and utility*	**Well Covered (WC):** Clear rationale for the study with a reference to available empirical evidence and/ or relevant theoretical models. The study provides clear and detailed rationale of the chosen scope of research with regards to clinical and/or organisational utility. **Adequately Addressed (AA):** Sufficient description of the rationale for the study although it appears less defined or clear. There is an adequate review of available empirical evidence and/ or theoretical models, which is relevant to the stated rationale. Some minor inconsistencies can be found. The study may provide less clear rationale of the chosen scope of research with regards to clinical and/or organisational utility. **Poorly Addressed (PA):** Insufficient description of the rationale for the study, much less defined or clear. Irrelevant and/ or not theory driven review of available empirical evidence. The study provides poor rationale of the chosen scope of research with regards to clinical and/or organisational utility.

	Not Addressed (NA): No information provided on the rationale for the study. No information about clinical or organisational utility.
2. Aims and objectives	**Well Covered (WC):** Clear, transparent and sufficiently detailed objectives or aims of the study. The aims/ objectives are consistent with the introduction (e.g., stated rationale and utility of the study). The aims/ objectives are clearly operationalised allowing the readers to easily identify them. **Adequately Addressed (AA):** Sufficient but less clear, less transparent or less detailed objectives or aims of the study. There are minor inconsistencies between the aims/ objectives and the introduction (e.g., stated rationale and utility of the study). The aims/ objectives may be less clearly operationalised. **Poorly Addressed (PA):** Insufficient, unclear or inappropriate objectives or aims of the study. There are major inconsistencies between the aims/ objectives and the introduction (e.g., stated rationale and utility of the study). The aims/ objectives are not operationalised.

	Not Addressed (NA): No identified study objectives or aims.
Methodology *3. Sample*	**Well Covered (WC):** Clear, detailed description of the sample (e.g., relevant demographic, occupational and/ or clinical characteristics). The sample is clearly representative of the target population. **Adequately Addressed (AA):** Sufficient description of the sample characteristics although some of the relevant information may be missing or may lack clarity. Sample is largely representative of the target population although there are some minor deviations from the intended target population (e.g., particular occupational groups may be under or over-represented). **Poorly Addressed (PA):** Poor description of the sample with the lack of sufficient details (e.g., relevant demographic, occupational and/ or clinical characteristics). The sample does not represent the target population or there are major concerns regarding generalisability of the sample. **Not Addressed (NA):** No information reported regarding sample characteristics.

4. Inclusion and exclusion criteria	**Well Covered (WC):** Clear, detailed description of the inclusion and exclusion criteria. The inclusion/exclusion criteria are clear, valid and appropriate given study rationale and aims. **Adequately Addressed (AA):** Sufficient description of the inclusion and exclusion criteria but some of the relevant information is lacking. There may be a minor uncertainty whether recruited sample fully adheres/ represents the inclusion/ exclusion criteria. There may be a minor uncertainty about the eligibility of the inclusion/exclusion criteria given study rationale and aims. **Poorly Addressed (PA):** Inclusion and exclusion criteria are poorly defined and/or lacking clarity. There may be major breaches of the inclusion/ exclusion criteria. The eligibility of the inclusion/exclusion criteria may be not eligible or valid given study rationale and aims. **Not Addressed (NA):** No information reported. The inclusion/ exclusion criteria are not addressed.

5. Recruitment	**Well Covered (WC):** Clear, detailed description of recruitment methods. Recruitment methods are clear, valid and appropriate. The number of participants approached and recruited is reported. The number of participants who withdrew from the study is also reported. **Adequately Addressed (AA):** Sufficient description of the recruitment methods but some of the relevant information is lacking (e.g., not reporting the recruitment rates for each of the groups studied, referring to participants who withdrew from the study but not reporting the initial number of participants invited to participate). Minor concerns about the validity or appropriateness of the recruitment methods. **Poorly Addressed (PA):** Recruitment methods are poorly defined and/ or lacking clarity (e.g., lacking clarity on the type of selection procedure, distribution of the materials or the context within which this is done). Major concerns about the validity or appropriateness of the recruitment methods. The number of participants approached and recruited is not reported. The number of participants who withdrew from the study is also not reported. **Not Addressed (NA):** No information reported. Recruitment methods are not addressed.

6. Sample size calculation.	**Well Covered (WC):** Power was calculated a-priori or post-hoc and was sufficient to detect a medium to large effect size at the statistically significant level given the number of participants. **Adequately Addressed (AA):** Power calculation is not present but the readers are able to determine that the sample size allows sufficient power to detect a medium to large effect size at the statistically significant level. Power calculation is present but does not consistently allow for sufficient power given all the types of analyses utilised throughout the study. **Poorly Addressed (PA)**: Power calculation determines that the sample size is insufficient.If power calculation or the estimated effect size were not reported, the remaining information allows determining that the sample size would be insufficient to achieve necessary power to detect an adequate to medium effect size. **Not Addressed (NA)**: No information reported. The sample size is not reported or the significant data is missing (e.g., sample sizes of all the groups used in the analysis).

*7. Measure of 'depression'** **The psychometric properties of the measures should be assessed with regards to values of internal consistency and/or test- retest reliability and/or concurrent validity when such are reported. If such values are not explicitly reported, the quality of measures should be determined on the basis of previously published and widely available data on the relevant psychometric properties.*	**Well Covered (WC):** Measure used to examine the variable of interest has a robust statistical validity and reliability with regards to the target population. Overall, the measure is a good and coherent representation of the variable of interest while indicating good construct validity. **Adequately Addressed (AA):** Measure used to examine the variable of interest has an adequate statistical validity and reliability with regards to the target population. Overall, the measure is an adequate but less good or coherent representation of the variable of interest while indicating an adequate construct validity. **Poorly Addressed (PA):** Measure used to examine the variable of interest has poor statistical validity and reliability with regards to the target population (e.g., the measure is unstandardised and/ or has not been previously evaluated with regards to psychometric properties within the target population). Overall, the measure is a poor representation of the variable of interest while indicating poor construct validity. **Not Addressed (NA):** No information reported. There is no available information regarding statistical validity and reliability of the measure.

*8. Measure of "burnout"**	Please refer to the same criteria as mentioned above.
Data analysis and results *9. Data analysis*	**Well Covered (WC):** Methods used to analyse the data are clear, appropriate and valid. Good and extensive consideration of the properties of the data with regards to the chosen method of analysis. No concerns regarding bias within the process of data analysis. **Adequately Addressed (AA):** Although methods used to analyse the data are largely clear, appropriate and valid, there are minor concerns regarding the appropriateness and/or the validity of analyses involved. There is an adequate consideration of the properties of the data with regards to chosen method of analysis. Minor concerns about the bias within the process of data analysis. **Poorly Addressed (PA):** Methods used to analyse the data are not clear, appropriate and/or valid. Poor consideration of the properties of the data with regards to the chosen method of analysis. Data analysis has clear evidence of bias (e.g., lack of data transformation when the statistical properties indicate such need).

	Not Addressed (NA): No information reported. There is no available information regarding data analysis and no consideration of the properties of the data.
10. Results	**Well Covered (WC):** Clear, detailed description and correct reporting of the results (e.g., r, p-values, effect sizes, confidence intervals, etc.). No evident misinterpretation or bias with the reported results (e.g., only ‘’favourable’’ data reported). **Adequately Addressed (AA):** Sufficient but less detailed and/or less clear description of the achieved results. Largely correct reporting of the results although, some relevant information may be missing (e.g., r, values, p-values, effect sizes, confidence intervals, etc.). Minor evidence of misinterpretation or bias within the reported results (e.g., only ‘’favourable’’ data reported). **Poorly Addressed (PA):** Insufficient or unclear results. Clear evidence of misinterpretation or bias within the reported results (e.g., only ‘’favourable’’ data reported). Significant proportion of the results is incorrect or missing (e.g., r, values, p-values, effect sizes, confidence intervals, etc.). **Not Addressed (NA)**: No information reported.

11. Internal validity	**Well Covered (WC):** Clear identification of possible confounding variables. Potential confounding variables are controlled for either by the design or statistical analyses. Clear and appropriate description of the actions taken to achieve this. Minimal possibility of bias within the study design, analysis or interpretation of the results suggesting good internal validity. **Adequately Addressed (AA):** Less clear identification or description of possible confounding variables. It is less clear how the study design or statistical analyses were adapted to account for potential confounding variables. Less clear description of the actions taken to achieve this. Possible bias within the study design, analysis or interpretation of the results suggesting adequate internal validity. **Poorly Addressed (PA):** Unclear or inappropriate description of possible confounding variables. Unclear how the study design or statistical analyses were adapted to account for potential confounding variables. Unclear description of the actions taken to achieve this. Clear bias within the study design, analysis or interpretation of the results suggesting poor internal validity. **Not Addressed (NA):** Not addressing or identifying potential confounding variables.

12. External validity	**Well Covered (WC):** Clearly outlined and discussed limitations of the study and the generalisability of the findings. Clear and well-covered discussion of the results in the context of available empirical evidence and/ or theoretical models and/ or future implications of the study. **Adequately Addressed (AA):** Adequate but less clear identification and discussion of study limitations and the generalisability of the findings. Less clear discussion of the results in the context of available empirical evidence and/ or theoretical models and/ or future implications of the study. **Poorly Addressed (PA):** Unclear identification and discussion of study limitations and the generalisability of the findings. Unclear or incorrect discussion of the results in the context of available empirical evidence and/ or theoretical models and/ or future implications of the study. **Not Addressed (NA):** Not addressing generalisability of the findings.

3.2 Appendix 1b: Assessment tool used to rate the articles against the quality criteria.

Assessment Tool

Study title: _____

Authors:_____Year/Country_____

Scoring: **0**- Not Addressed (NA), **1**-Poorly Addressed (PA), **2**-Adequately Addressed (AA), **3**-Well Covered (WC)*

*please refer to the rating guidelines of the quality criteria for further description.

Introduction and literature review (2 items)	
1. Study rationale and utility.	
2. Study aims and objectives.	
Introduction and literature review (TOTAL)	**__out of 6**
Methodology (6 items)	
3. Sample.	
4. Inclusion and exclusion criteria.	
5. Recruitment.	
6. Sample size calculation.	
7. Measure of ‘‘depression’’.	
8. Measure of "burnout".	
Methodology (TOTAL)	**__out of 18**
Data analysis and results (2 items)	
9. Data analysis.	
10. Results.	
Data analysis and results (TOTAL)	**__out of 6**

Discussion (2 items)	
11. Internal validity and confounding variables.	
12. External validity	
Discussion (TOTAL)	**__out of 6**
Summarised Total Score	**__out of 36**

3.3 Appendix 2: Systematic Review Guidelines

Author Guidelines:

International Journal of Mental Health & Psychiatry.

International Journal of Mental Health & Psychiatry (IJMHP) publishes articles in areas related to Mental health disorders, Psychiatry, Psychological disorders, Neurology, Behavioural Disorders, Personality disorder, Severe Learning disability, Social & Geriatric Psychiatry etc. It also covers other related topics as Molecular Psychiatry, Antidepressants & their Side Effects, Cognitive Disorders, Alcoholism, Drug addiction and many more.

IJMHP welcomes the submission of manuscripts that meet the general criteria of novelty, significance and scientific excellence. The papers will be published approximately 15 days after acceptance.

Instructions for Authors

In order to reduce delays, authors should adhere to the level, length and format of the SciTechnol Journals at every stage of processing right from manuscript submission to each revision stage. Submitted articles should have a 300 words summary/abstract, separated from the main text. The summary should comprise of a brief account of the work which clearly states the purpose of the study and the methodology adopted, also highlighting major findings briefly. The text may contain a few short subheadings of no more than 40 characters each.

The details of manuscript submission can be found in here.

Submission of an Article:

In order to reduce delays, authors should adhere to the level, length and format of the SciTechnol Journals at every stage of processing right from manuscript submission to each revision stage. Submitted articles should have a 300 words summary/abstract, separated from the main text. The summary should comprise of a brief account of the work which clearly states the purpose of the study and the methodology adopted, also highlighting major findings briefly. The text may contain a few short subheadings of no

more than 40 characters each.

Type of papers accepted:

IJMHP accepts various formats of literary works such as Research articles, Reviews, abstracts, Addendums, Announcements, Short commentaries, Book reviews, Mini reviews, Opinions, Rapid communications, Letters to the Editor, Annual meeting abstracts, Conference proceedings, Calendars, Case-reports, Corrections, Discussions, Meeting-reports, News, Obituaries, Orations, Product reviews, Hypotheses and Analyses.

Open Access:

In recent times, there has been a lot of debate on the implementation of Open Access for research publications. Realizing the potential of Open Access in terms of greater visibility within and beyond the scientific community, there has been a tremendous boost to Open Access movement through various Open Access publishers. Considering the importance of Open Access, IJMHP is offering open option to authors.

The Open Access model operates alongside an established subscription model. Submission of an article remains free. If article accepted for publication, the author is given the choice to pay a fee to make their article open access.

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Benefits of Open Access include greater visibility, accelerated citation, immediate access to the full text versions, higher impact and authors retain the copyright to their work. All open access articles are published under the terms of the Creative Commons Attribution (CC-BY) license. It also allows immediate deposit of the final published version in other repositories without restriction on re-use.

Article Processing Charges:

Publishing under Open Access mode involves a publication fee of US $2619.

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Article Preparation Guidelines:

 Authors are expected to attach an electronic covering letter completely mentioning the type of manuscript (e.g., Research article, Review articles, Brief Reports, Case study etc.) Unless invited on a special case, authors cannot classify a particular manuscript as Editorials or Letters to the editor or concise communications.

 Confirm that each individual named as an author meets the uniform requirements of the International Journal of Mental health & Psychiatry criteria for authorship.

 Please make sure that the article submitted for review/publication is not under consideration elsewhere simultaneously.

 Clearly mention financial support or benefits if any from commercial sources for the work reported in the manuscript, or any other financial interests that any of the authors may have, which could create a potential conflict of interest or the appearance of a conflict of interest with regard to the work.

 A clear title of the article along with complete details of the author/s (professional/institutional affiliation, educational qualifications and contact information) must be provided in the tile page.

 Corresponding author should include address, telephone number, fax number, and e-mail address in the first page of the manuscript and authors must address any conflict of interest with others once the article is published.

 Number all sheets in succession, including references, tables, and figure legends.

 Title page is page 1. On the first page, type the running head (short title for top of each page), title (which cannot include any acronyms), names of the authors and their academic degrees, grants or other financial supporters of the study, address for correspondence and reprint requests, and corresponding author's telephone and fax numbers and e-mail address.

Review Articles:

 Review articles are written based mostly on secondary data that is falling in line with the theme of the journal. They are brief, yet critical discussions on a specific aspect of the subject concerned. Reviews generally start with the statement of the problem with a brief abstract of 300 words and few key words. Introduction generally brings the issue forward to the readers followed by analytical discussion with the help of necessary tables, graphs, pictures and illustrations wherever necessary. It summarizes the topic with a conclusion. All the statements or observations in the review articles must be based on necessary citations, providing complete reference at the end of the article.

Acknowledgement:

This section includes acknowledgment of people, grant details, funds, etc. **Note:** If an author fails to submit his/her work as per the above instructions, they are pleased to maintain clear titles namely headings, subheadings and respective subtitles.

References:

Only published or accepted manuscripts should be included in the reference list. Meetings abstracts, conference talks, or papers that have been submitted but not yet accepted should not be cited. All personal communications should be supported by a letter from the relevant authors. SciTechnol uses the numbered citation (citation-sequence) method. References are listed and numbered in the order that they appear in the text. In the text, citations should be indicated by the reference number in brackets. Multiple citations within a single set of brackets should be separated by commas. A range should be given where there are three or more sequential citations. Example: "... now enable biologists to simultaneously monitor the expression of thousands of genes in a single experiment [1, 5-7, 28]." Make sure the parts of the manuscript are in the correct order for the relevant journal before ordering the citations. Figure captions and tables should be at the end of the manuscript.

Authors are requested to provide at least one online link for each reference as following (preferably PubMed). Because all references will be linked electronically as much as possible to the papers they cite, proper formatting of the references is crucial. Please use the following style for the reference list.

Examples:

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1. Laemmli UK (1970) Cleavage of structural proteins during the assembly of the head of bacteriophage T4. Nature 227: 680-685.

2. Brusic V, Rudy G, Honeyman G, Hammer J, Harrison L (1998) Prediction of MHC class II- binding peptides using an evolutionary algorithm and artificial neural network. Bioinformatics 14: 121-130.

3. Doroshenko V, Airich L, Vitushkina M, Kolokolova A, Livshits V, et al. (2007) YddG from Escherichia coli promotes export of aromatic amino acids. FEMS Microbiol Lett 275: 312-318.

Note: Please list the first five authors and then add "et al." if there are additional authors.

Electronic Journal Articles Entrees Programming Utilities

http://eutils.ncbi.nlm.nih.gov/entrez/query/static/eutils_help.html

Books

1. Baggot JD (1999) Principles of drug disposition in domestic animals: The basis of Veterinary Clinical Pharmacology. (1st edtn), W.B. Saunders company, Philadelphia, London, Toronto.

2. Zhang Z (2006) Bioinformatics tools for differential analysis of proteomic expression profiling data from clinical samples. Taylor & Francis CRC Press.

Conferences:

Hofmann T (1999) The Cluster-Abstraction Model: unsupervised learning of topic hierarchies from text data. Proceedings of the International Joint Conference on Artificial Intelligence.

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These should be used at a minimum and designed as simple as possible. We strongly

encourage authors to submit tables as .doc format. Tables are to be typed 1.5 to double-spaced throughout. Each table should be on a separate page, numbered consecutively in Arabic numerals and supplied with a heading and a legend. Tables should be self-explanatory without reference to the text. Preferably, the details of the methods used in the experiments should be described in the legend instead of in the text. The same data should not be presented in both table and graph form or repeated in the text. Cells can be copied from an Excel spreadsheet and pasted into a word document, but Excel files should not be embedded as objects. Note: If the submission is in PDF format, the author is requested to retain the same in .doc format in order to aid in completion of process successfully.

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- Table Specifications
- Equation Specifications

Supplementary Information:

Discrete items of the Supplementary Information (for example, figures, tables) referred to an appropriate point in the main text of the paper.

Summary diagram/figure included as part of the Supplementary Information (optional).

All the Supplementary Information must be supplied as a single PDF file and file size should be within the permitted limits. Images should be maximum of 640 x 480 pixels (9 x 6.8 inches at 72 pixels per inch) in size.

3.4 Appendix 3: Empirical Study Guidelines

Author Guidelines:

WORK: A Journal of Prevention, Assessment & Rehabilitation.

WORK: A Journal of Prevention, Assessment & Rehabilitation is an interdisciplinary, international journal which publishes high quality peer-reviewed manuscripts covering the entire scope of the occupation of work. The journal's subtitle has been deliberately laid out: The first goal is the prevention of illness, injury, and disability. When this goal is not achievable, the attention focuses on assessment to design client- centred intervention, rehabilitation, treatment, or controls that use scientific evidence to support best practice.

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1. Manuscripts must be written in English. Authors whose native language is not in English are recommended to seek the advice of a native English speaker, if possible, before submitting their manuscripts. Please use person first language; that is a person with an injury, not an injured person.

2. Manuscripts should be typed on one side of the paper only, with wide margins and double spacing throughout. For the electronic file of the text you may use any standard word processor. Do not use page layout software and do not send PostScript files of the text. The preferred length of a manuscript is 20-30 pages double spaced (not including references, tables or figures). Typically, the journal only publishes data collected within the past 5 years. Include the degree to which your paper builds on and advances on knowledge published within WORK.

3. Manuscripts should use wide margins and double spacing throughout, including the abstract and references. Every page of the manuscript, including the title page, references, tables, etc., should be numbered. However, in the text no reference should be made to page numbers; if necessary, one may refer to sections. Try to avoid the excessive use of italics and bold face.

4. Manuscripts should be organized in the following order:

Title page
Introduction
Body of text (divided by subheadings)
Conclusion
Acknowledgements
References
Tables
Figure captions
Figures

5. Headings

Headings and subheadings should be numbered and typed on a separate line, without indentation. SI units should be used, i.e., the units based on the metre, kilogramme, second, etc.

6. Title page

- The title page should provide the following information:

Title (should be clear, descriptive and not too long)
Name(s) of author(s); please indicate who is the corresponding author
Full affiliation(s)
Present address of author(s), if different from affiliation
Complete address of corresponding author, including tel. no., fax no. and e-mail address.

- Abstract

Keywords (3-5 words not in your title)

7. Abstract

The abstract should be clear, descriptive, self-explanatory and not longer than 200 words, it should also be suitable for publication in abstracting services.
The abstract for research papers should follow the "structured abstract" format. Section labels should be in bold uppercase letters followed by a colon, and each section will begin on a new line. BACKGROUND: OBJECTIVE: METHODS: RESULTS: CONCLUSIONS:

8. Tables

Tables should be numbered according to their sequence in the text. The text should include references to all tables. Each table should be provided on a separate page of the manuscript. Tables should never be included in the text. Each table should have a brief and self-explanatory title. Column headings should be brief, but sufficiently explanatory. Standard abbreviations of units of measurement should be added between parentheses. Vertical lines should not be used to separate columns. Leave some extra space between the columns instead. Any explanations essential to the understanding of the table should be given in footnotes at the bottom of the table. Table captions should be provided all together on a separate sheet.

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The reference style for WORK is Vancouver style

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[1] Rose ME, Huerbin MB, Melick J, Marion DW, Palmer AM, Schiding JK, Kochanek PM, Graham SH. Regulation of interstitial excitatory amino acid concentrations after cortical contusion injury. Brain Res. 2002; 935(12): 406.

[2] Murray PR, Rosenthal KS, Kobayashi GS, Pfaller MA. Medical microbiology. 4th ed. St. Louis: Mosby; 2002.

[3] Berkow R, Fletcher AJ, editors. The Merck manual of diagnosis and therapy. 16th ed. Rahway (NJ): Merck Research Laboratories; 1992.

[4] Meltzer PS, Kallioniemi A, Trent JM. Chromosome alterations in human solid tumors. In: Vogelstein B, Kinzler KW, editors. The genetic basis of human cancer. New York: McGrawHill; 2002. p. 93113.

[5] Canadian Cancer Society [homepage on the Internet]. Toronto: The Society; 2006 [updated 2006 May 12; cited 2006 Oct 17]. Available from: http://www.cancer.ca/.

11. Footnotes

Footnotes should only be used if absolutely essential. In most cases it is possible to incorporate the information in the text.

If used, they should be numbered in the text, indicated by superscript numbers and kept as short as possible

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Lynn Shaw PhD, Occupational Scientist Vice
President Academic
Pacific Coast University
For Workplace Health Science 4755
Cherry Creek Road
Port Alberni, BC V9Y 0A7 Canada.

3.5 Appendix 4: Empirical Study Documentation

From: Feruza Nuritova (Staff) [f.nuritova@dundee.ac.uk] Sent: 04 December 2014 14:38
To: Tayside Ethicshelpline (NHS TAYSIDE); Chabinska Joanna (NHS TAYSIDE) Cc: Coote Liz (NHS TAYSIDE); Hogg Lindsay (NHS TAYSIDE)
Subject: RE: Doctoral thesis research JC REF: 14/GA/116

Dear Joanna

Study title: "Burnout and Job Satisfaction among Health Care Professionals Working with Challenging Behaviour: the mediating role of psychological mindedness and perceived support"
CI: Prof Kevin Power
PI: Joanna Chabinska (Doctoral thesis in Clinical Psychology)

Thank you for sending us your study information.

After reading your study information I can confirm as this is research in a clinical environment rather than clinical research per se it does not require a 'Sponsor Letter' as Sponsorship relates specifically to clinical research.

Consequently, it doesn't require NRES REC review or NHS R&D permission.

This is because any research that involves NHS staff only is no longer considered as clinical research per se and doesn't require REC OR NHS R&D permission. I would advise you to seek ethical review via a University REC (http://www.dundee.ac.uk/main/research/ethics).

Each Board/Trust R&D (unfortunately) has their own position as to whether NHS R&D permission is required for research of this nature.

As the activity will be happening in NHS Tayside, our position would be that you do not need a formal permission via submission of an IRAS form - simply a notification to the Board, via the R&D Office, as a courtesy.

Kind regards, Vera

Vera Feruza Nuritova PhD
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Tayside Medical Science Centre Ninewells
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Development Office Residency Block, Level 3
George Pirie Way, Dundee United
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DD1 9SY

Invitation Letter

What Factors Influence Employee's Job Satisfaction and Burnout?

The NHS Tayside Health Board is interested in job satisfaction and working conditions among the staff faced with challenging behaviours at work.

This letter will provide you with the information about the upcoming study jointly supported by the NHS Tayside and the University of Edinburgh as part of a research project fulfilling the criteria for the Doctorate in Clinical Psychology.

This study has been driven by the identified service need aiming to develop greater understanding of factors which influence job satisfaction and burnout among staff.

This study provides all the staff with the unique opportunity to have their voice heard.

Why are we interested?

We know that satisfied employees feel more enthusiastic, motivated, productive and fulfilled at their work. We also know that greater job satisfaction is associated with positive attitudes, improved performance and better patient care. On the other hand, some environmental, organizational and psycho-social factors can influence how satisfied we are with our jobs or how dissatisfied or burnt-out we feel. This study aims to learn more about the effects of working conditions and psycho-social resources, and how they affect the way you feel about your job.

Who is invited to participate?

If you are working within the in-patient Forensic/Learning Disability service and you are employed by the NHS Tayside, you are encouraged to participate. We would like to hear from ALL the staff regardless of their job title or position held

How will this be done?

You will be asked to fill in a set of questionnaires which will be addressed to you in a sealed envelope. You will then be asked to return them in an envelope provided ensuring anonymity and confidentiality of responses.

Questionnaire packs will be provided either directly to you or through your Team Leader/ Supervisor. If you are a Team Leader, you will be contacted directly either by Joanna Chabinska (Chief Investigator) who will provide you with the required number of envelopes for each member of your team. We would like to ask for your assistance in distributing the envelopes between your team members and encouraging as many staff to complete and return them as is possible.

When will the recruitment commence?

The start of the recruitment procedure is planned for [redacted]

We are contacting you now to provide you with the relevant information and to ensure that ALL the Team Leaders and staff are included in this project.

Any questions regarding the study can be directed to Ms Joanna Chabinska, Trainee Clinical Psychologist at joannachabinska@nhs.net. This study is supervised by Dr Elaine Whitefield (Lead Clinician and Consultant Clinical Psychologist), and Prof Kevin Power (Head of Tayside Psychological Therapies Service).

Version 9; 30/09/2015

Information Sheet

What Factors Influence Employee's Job Satisfaction and Burnout?

NHS Tayside is interested in job satisfaction and working conditions among staff faced with challenging behaviours at work. This study has been driven by the identified service need aiming to develop greater understanding of factors which influence job satisfaction and burnout among staff.

This letter will provide you with information about the study which is jointly supported by NHS Tayside and the University of Edinburgh, as part of a research project fulfilling the criteria for the Doctorate in Clinical Psychology.

Before you take part, it is important for you to understand why the research is being carried out and what it will involve. Please take time to read this information sheet. If there is anything that is not clear to you or if you would like more information then please contact me using the details I have provided at the end of this form. This information sheet is for you to keep.

What is the purpose of the study?

Research suggests that satisfied employees feel more enthusiastic, motivated, productive and fulfilled at their work. We also know that greater job satisfaction is associated with positive attitudes, improved performance and better patient care. On the other hand, some environmental, organisational and psycho-social factors can influence how satisfied we are with our jobs or how dissatisfied or burnout we feel. This study is interested to learn more about the effects of working conditions and psycho-social resources, and how they affect the way people feel about their job.

Why have I been invited to take part?

You have been invited to take part in this study as you are employed by NHS Tayside and you are currently working within the Forensic/ Learning Disability service (in-patient, out-patient/community). We are interested in working conditions of ALL staff, regardless of their job title or position held. It is your decision whether you wish to participate or not, however we encourage you to use this opportunity to tell us about your experience of work. Participating in the study will not affect your work or employment

conditions within NHS Tayside at the present time or in the future.

Will participation be anonymous and confidential?

Yes. All the information we collect during the course of the study will be anonymised and kept confidential. There are strict laws which safeguard your privacy at every stage of the study.

Although the questionnaire pack was addressed to you directly in a sealed envelope, you have been provided with a pre-addressed envelope to return your responses to ensure your anonymity and confidentiality. Consequently, none of the identifiable information will be collected (your name, address, exact job title etc) and the completed questionnaires will be assigned an anonymous code (e.g., 001, 002, etc). The Demographic Information Sheet will ask you about your age, gender, education and the type of work you are doing but no personally identifiable information will be collected. Only the research team (Dr Elaine Whitefield, Professor Kevin Power and Dr Nuno Ferreira) and myself will be allowed to look at the information that is collected. Mrs Barbara Wilson will also have access to the summarised information regarding the overall results.

What will the participation involve?

Step 1- Read this information sheet. If you give your consent to participate in the study, as well as dissemination of the research results as described in the participant information sheet, please follow steps 2 & 3.

Step 2- You will then be asked to fill in a set of questionnaires provided to you in a sealed envelope. This will include the Demographic Information Sheet and a set of 6 brief questionnaires.

Step 3- After filling in the Demographic Information Sheet and a set of 6 brief questionnaires, we ask that you return them in the pre-addressed envelope and post in the **'JOB SATISFACTION QUESTIONNAIRE' BOX**, which will be located in the **wards, [redacted] area.**

How can I give my consent to participate?

By returning your completed questionnaires and demographic information sheet you are giving your consent to participate in the study as well as dissemination of the research results as described in the participant information sheet. You also give your permission for the research team to look at and analyse relevant sections of data collected, including your responses.

By returning your responses you confirm your understanding of confidentiality, anonymity and the voluntary nature of the study, which will not affect your work or employment conditions within NHS Tayside at the present time or in the future.

What are the possible benefits of taking part?

This study provides you with a unique opportunity to "have your voice heard" by providing the information about your work experience. You may feel that by taking part in the study you will contribute to a greater understanding of the factors that may ensure, maintain or improve working conditions. Finally, you may feel that your participation may also help to explain what psycho-social resources are beneficial for improving job-satisfaction in Forensic/Learning Disability Services.

What are the possible disadvantages of taking part?

The questionnaires used in this study have been used across different services by other clinical and research teams. There is no evidence to suggest that completing the questionnaires will cause any harm to you. However, some questions may make you think about feelings or worries you may have in relation to your work. Subsequently, if there were any work-related issues arising you may want to consider discussing this with your line manager, NHS Tayside Well-being Services or Occupational Health & Safety Advisory Services (OHSAS).

What happens when the study is finished?

Completed questionnaires will be kept in a locked cabinet and accordingly with NHS Tayside Code of Confidentiality and Data Protection policies. The anonymised and coded information will be also stored on a NHS computer so the data can be analysed using a statistical program. The information on the NHS computer will be protected with a password to keep it confidential.

What will happen to the results of the study?

The anonymised results of the study will be written up and submitted as a part of the Doctorate in Clinical Psychology at the University of Edinburgh. After this, it will be submitted for publication in a scientific journal and presented to relevant interested groups and conferences. A summary of the results will also be presented to Clinical Leads/ Heads of the Service within NHS Tayside who are currently supporting the project.

Can I find out the results of the study?

Yes. Everyone who has participated will receive a summary of the research results. This will be done either in a paper format or via circulating a generic email via NHS.net

Who has reviewed the study?

The study proposal has been reviewed by the University of Edinburgh, Doctorate in Clinical Psychology Programme, as well as by a number of experienced clinical and research supervisors. Subsequently, the study was approved by the University of Edinburgh Ethics Committee.

The Research Ethics Committee looks at studies to make sure that participants are kept safe. The East of Scotland Research Ethics Committee raised no concerns about this study. NHS Tayside management approval has also been obtained. The study was also approved and supported by the Tayside Director of Human Resources, [redacted].

Who do I contact if I want to make a complaint?

Please contact us first if there is anything you are unhappy with in regards to the study. This will allow us to provide you with any relevant clarification and if needed, this will allow us to work together to resolve any problems.

If you wish to complain about the way you have been treated by the researchers, or anyone else involved in the study you can do this by writing to the Complaints and Feedback Team Lead, Complaints and Advice Team, Level 9, Ninewells Hospital, Dundee, DD1 9SY. Alternatively, you can email: complaints.tayside@nhs.net or phone: 0800 027 5507.

Any questions regarding the study can be directed to the Chief Investigator, Ms Joanna Chabinska, Trainee Clinical Psychologist, at joannachabinska@nhs.net or the Independent advisor to the study, Dr Nuno Ferreira, at nferrei2@exseed.ed.ac.uk

Version 9; 30/09/2015

Participant Demographic Sheet

By returning your questionnaires and your demographic information sheet you are giving your consent to participate in the study as well as dissemination of the research results as describe d in the Participant Information Sheet. The full-version of the Participant Information Sheet is available in paper or electronically via your internal NHS Tayside email account. Please check your email account for more information.

Questions about you:

Are you male □ female □

How old are you?

19 and under □ 20- 29 □ 30-39 □ 40-49 □ 50-59 □ 60-69 □

Questions about your job:

3. How long have you been in a current post?

under 1 year □ 1-3 years □ 4-6 years □ 7-10 years □ 11-15 years □ 16 years-more □

4. How long have you been employed by NHS Tayside?

under 1 year □ 1-3 years □ 4-6 years □ 7-10 years □ 11-15 years □ 16 years-more □

5. What is the highest educational qualification you have obtained?

O grade/ GCSE or equivalent □ A Level/ higher/ SYS or equivalent □ HND/ HNC or equivalent □

Degree (e.g., College degree, Bachelors) or equivalent □ Higher Degree (e.g., MA/ MSc/ PhD) □

6. If you have undergone professional training, how long have you been qualified (in years): ___

7. What professional group are you a member of:

Nursing □ Medicine □ Administration/ Clerical □ Allied Health Professions □ Psychology □ Ancillary (e.g., security, domestic) □

8. Do you work a shift pattern?

Yes □ No □

9. If you work shifts, how many hours do you work per shift?

12 h □ 7.5 h□ Other □

10. What work-settings do you work in?

In-patient □ Out-patient □

11. On average, how much time do you spend in a direct, face to face contact with patients per week?

Less than 2 hours □ 2 to 5 hours □ 6 to 10 hours □ 11 to 15 hours □

16 to 20 hours □ 21 to 25 hours □ 26 to 30 hours □ More than 31 hours □

12. On a working day, what is the approximate mileage you commute to and from work? ___

13. In total, how many days off sick have you had in the last 6 months? ___

SCHOOL *of* HEALTH IN SOCIAL SCIENCE CLINICAL AND HEALTH PSYCHOLOGY

Joanna Chabinska
Trainee Clinical Psychologist
Older People Psychological Therapies Service Susan Carnegie Centre
Stracathro Hospital By Brechin DD9 7QA

The University of
Edinburgh
Medical School
Doorway 6, Teviot Place
Edinburgh EH8 9AG

Telephone 0131 651
3969
Fax 0131 650 3891
Email
submitting.ethics@ed.ac.uk

09 June 2015

Dear Joanna,

Application for Level 1 Ethical Approval

Project Title: Working with behaviour that challenges: Work-related stress among staff employed by the NHS Tayside
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 7th June 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

www.mindgarden.com

To whom it may concern,

This letter is to grant permission for the above named person to use the following copyright material for his/her thesis or dissertation research:

Instrument: ***Maslach Burnout Inventory, Forms: General Survey, Human Services Survey & Educators Survey***

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Sincerely,

Robert Most

Mind Garden,

Inc.

www.mindgarden.com

From: Feruza Nuritova (Staff)[f.nuritova@dundee.ac.uk]
Sent: 04 December 2014, 14:38
To: Tayside Ethicshelpline (NHS TAYSIDE); Chabinska Joanna (NHS TAYSIDE)
Cc: Coote Liz (NHS TAYSIDE); Hogg Lindsay (NHS TAYSIDE)
Subject: RE: Doctoral thesis research JC REF:

14/GA/116

Dear Joanna

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CI: Prof Kevin Power
PI: Joanna Chabinska (Doctoral thesis in Clinical Psychology) Thank you for sending us your study information.

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As the activity will be happening in NHS Tayside, our position would be that you do not need a formal permission via submission of an IRAS form - simply a notification to the Board, via the R&D Office, as a courtesy.

Kind
regards,
Vera

Vera Feruza Nuritova PhD
Clinical Research Governance Manager

e:f.nuritova@dundee.ac.uk<mailto:f.nuritova@dundee.ac.uk> dl: +44 (0) 1382 383877

Vera Feruza Nuritova PhD Clinical Research Governance Manager

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George Pirie Way, Dundee
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East of Scotland Research Ethics Service *(EoSRES)*

Research Ethics Service
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Medical School Dundee
DD1 9SY

Date:9th December 2014
Our Ref: CYA**/AG/14/GA/116**
Enquiries to: Mrs Caroline Ackland
Direct Line: 01382 3838
Email: Caroline.ackland@nhs.net

Joanna Chabinska
Trainee Clinical Psychologist
Older People Psychological Therapies Centre
Susan Carnegie Centre,
Strathcathro Hospital By Brechin, DD9 7QA

Dear Joanna,

Project Title:

You have sought advice from the East of Scotland Research Ethics Service on the above project. This has been considered by the Scientific Officer and you are advised that, based on the submitted documentation (email correspondence and table below), it does not need NHS ethical review under the terms of the Governance Arrangements for Research Ethics Committees (A Harmonised Edition).

Document	Version	Date
Email with summary proposal	Not specified	Various
Understanding, Predictability and Control (Questionnaire 1)	Not specified	Not specified
Burnout (Questionnaire 2)	Not specified	Not specified
Job satisfaction (JS) (Questionnaire 3)	Not specified	Not specified
Perceived Support (PS) (Questionnaire 4)	Not specified	Not specified
Psychological Mindedness (PM) (Questionnaire 5)	Not specified	Not specified
Questionnaire 6	Not specified	Not specified

The advice is based on the following:

- *The project is a survey of current knowledge and awareness of a healthcare issue amongst NHS staff.*

If the project is considered to be research you may require ethical approval as outlined in The Research Governance Framework for Health and Community Care. You may wish to contact your employer or professional body to arrange this.

For projects that are not research and will be conducted within the NHS you should contact the relevant local Quality Improvement Team(s) who will inform you of the relevant governance procedures required before the project commences.

This letter should not be interpreted as giving a form of ethical approval or any endorsement of the project, but it may be provided to a journal or other body as evidence that NHS ethical approval is not required. However, if you, your sponsor/funder or any NHS organisation feels that the project requires ethical review by an NHS REC, please write setting out your reasons and we will be pleased to consider further. You should retain a copy of this letter with your project file as evidence that you have sought advice from the East Scotland Research Ethics Service.

Yours sincerely,

Caroline.

Caroline Ackland
Scientific Officer & Manager
East of Scotland Ethics Service