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DOCTOR OF PHILOSOPHY

Coping, mindfulness, occupational stress and burnout amongst healthcare professionals employed within forensic inpatient settings

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**Coping, Mindfulness, Occupational Stress and Burnout amongst Healthcare
Professionals Employed within Forensic Inpatient Settings**

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Thesis submitted in partial fulfilment for the Degree of Doctorate in Clinical Psychology

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Section One

Thesis Abstract

Coping, Mindfulness, Occupational Stress and Burnout amongst Healthcare Professionals Employed Within Forensic Inpatient Settings

Although working within forensic inpatient settings can be emotionally challenging and stressful, no research has investigated the role of coping and mindfulness upon occupational stress and burnout amongst mental healthcare professionals (MHCPs) employed within secure hospitals (SHs).

The literature review explored the effectiveness of Mindfulness Based Stress Reduction (MBSR) programmes on psychological functioning in healthcare professionals. MBSR appeared to be effective in reducing anxiety, depression, trait anger, rumination and stress, and increasing mindfulness and self-compassion. However, MBSR did not prove to be as effective in reducing burnout or improving resilience. Abbreviated MBSR programmes of less than four weeks appeared to be a viable alternative to the standard eight week programmes. Improved quality studies with more robust study designs were recommended.

The research study investigated the role of coping and mindfulness upon occupational stress and burnout amongst MHCPs employed within forensic inpatient settings. A total of 151 MHCPs from five SHs in Wales completed four questionnaires, measuring dispositional mindfulness, coping, occupational stress and burnout. MHCPs reported elevated levels of occupational stress. Despite moderate levels of emotional exhaustion and depersonalisation, MHCPs retained a positive sense of personal accomplishment, and felt confident in performing their duties. Higher levels of mindfulness were significantly associated with lower levels of maladaptive coping, stress and burnout levels, therefore, mindfulness based interventions (MBIs) could prove to be a viable intervention to support MHCPs in SHs.

Higher levels of the mindfulness facet, acting with awareness, were found to significantly predict lower levels of emotional exhaustion and depersonalisation. This research also suggested that higher levels of acting with awareness may help prevent emotional exhaustion and depersonalisation in MHCPs employed in SHs.

The literature review and research paper findings were discussed in relation to theory development, clinical implications and future research, followed by a reflective commentary detailing process and personal issues that the researcher encountered from conducting the research study.

Declaration

This work has not been previously accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.

Signed: (Candidate)

Date: 7th August 2015

Statement 1

This thesis is the result of my own investigations, except where otherwise stated. Other sources are acknowledged by footnotes giving explicit references. A list of references is appended.

Signed: (Candidate)

Date: 7th August 2015

Statement 2

I agree to deposit an electronic copy of my thesis (the work) electronically in the Bangor University (BU) Institutional Digital Repository, the British Library ETHOS system, and/or in any other repository authorised for the use by Bangor University and where necessary have gained the required permissions for the use of third party material.

Signed: (Candidate)

Date: 7th August 2015

Acknowledgements

I would like to thank all the mental healthcare professionals who participated in the research study and who were also willing to share personal information about themselves. I would personally like to thank the five secure hospitals (Caswell Clinic, Cwn Seren, Llanarth Court, Ty Llywelyn Medium Secure Unit and Whitchurch Hospital) and the hospital research contacts (Dr. Thomas Hoare, Dr. Hugh Dafforn, Dr. Gemma O'Brien, Dr. Katie Ann Elliott and Robert Kidd) that worked so hard to ensure that the research study was successful. My thanks go to all the administration staff that helped distribute the research packs and for all their administration assistance and support (Aimee Partridge, Cherie Rees and Diane Davies).

I am most grateful to Dr. Katie Ann Elliott and Dr. Robin Owen for agreeing to supervise this project. They have both been incredibly supportive throughout the entire research process, always providing me with advice, encouragement and guidance. I would like to thank Dr. Mike Jackson, Dr. Gemma Griffiths, Dr. Christopher Saville and Professor Richard Hastings for their advice and guidance relating to different aspects of the research. I would also like to thank Dr. Rossela Roberts for all her advice and support relating to the NHS ethics process. I am very grateful to my training coordinator Dr. Carolien Lamers for her commitment, enthusiasm and encouragement during the research study and throughout my clinical training.

I would like to thank my partner for his endless encouragement, emotional support, understanding and practical help during the research study and throughout my clinical training. My thanks also go to my friends and family for making me smile and supporting me throughout the whole research process.

Section Two
Ethics Proposal

NHS REC Form

Reference:
14/WA/1034

IRAS Version 3.5

Welcome to the Integrated Research Application System

IRAS Project Filter

The integrated dataset required for your project will be created from the answers you give to the following questions. The system will generate only those questions and sections which (a) apply to your study type and (b) are required by the bodies reviewing your study. Please ensure you answer all the questions before proceeding with your applications.

Please enter a short title for this project (maximum 70 characters)
The role of coping and mindfulness on burnout and occupational stress

1. Is your project research?

Yes No

2. Select one category from the list below:

- Clinical trial of an investigational medicinal product
- Clinical investigation or other study of a medical device
- Combined trial of an investigational medicinal product and an investigational medical device
- Other clinical trial to study a novel intervention or randomised clinical trial to compare interventions in clinical practice
- Basic science study involving procedures with human participants
- Study administering questionnaires/interviews for quantitative analysis, or using mixed quantitative/qualitative methodology
- Study involving qualitative methods only
- Study limited to working with human tissue samples (or other human biological samples) and data (specific project only)
- Study limited to working with data (specific project only)
- Research tissue bank
- Research database

If your work does not fit any of these categories, select the option below:

Other study

2a. Please answer the following question(s):

- a) Does the study involve the use of any ionising radiation? Yes No
- b) Will you be taking new human tissue samples (or other human biological samples)? Yes No
- c) Will you be using existing human tissue samples (or other human biological samples)? Yes No

3. In which countries of the UK will the research sites be located? *(Tick all that apply)*

- England
- Scotland
- Wales
- Northern Ireland

3a. In which country of the UK will the lead NHS R&D office be located:

Date: 03/06/2014

1

142705/617821/1/858

NHS REC Form

Reference:
14/WA/1034

IRAS Version 3.5

- England
 Scotland
 Wales
 Northern Ireland
 This study does not involve the NHS

4. Which review bodies are you applying to?

- NHS/HSC Research and Development offices
 Social Care Research Ethics Committee
 Research Ethics Committee
 National Information Governance Board for Health and Social Care (NIGB)
 National Offender Management Service (NOMS) (Prisons & Probation)

For NHS/HSC R&D offices, the CI must create Site-Specific Information Forms for each site, in addition to the study-wide forms, and transfer them to the PIs or local collaborators.

5. Will any research sites in this study be NHS organisations?

- Yes No

6. Do you plan to include any participants who are children?

- Yes No

7. Do you plan at any stage of the project to undertake intrusive research involving adults lacking capacity to consent for themselves?

- Yes No

Answer Yes if you plan to recruit living participants aged 16 or over who lack capacity, or to retain them in the study following loss of capacity. Intrusive research means any research with the living requiring consent in law. This includes use of identifiable tissue samples or personal information, except where application is being made to the NIGB Ethics and Confidentiality Committee to set aside the common law duty of confidentiality in England and Wales. Please consult the guidance notes for further information on the legal frameworks for research involving adults lacking capacity in the UK.

8. Do you plan to include any participants who are prisoners or young offenders in the custody of HM Prison Service or who are offenders supervised by the probation service in England or Wales?

- Yes No

9. Is the study or any part of it being undertaken as an educational project?

- Yes No

Please describe briefly the involvement of the student(s):
The study will form part of the researcher's thesis towards obtaining a Doctorate in Clinical Psychology.

9a. Is the project being undertaken in part fulfilment of a PhD or other doctorate?

- Yes No

10. Will this research be financially supported by the United States Department of Health and Human Services or any of its divisions, agencies or programs?

Date: 03/06/2014

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142705/617821/1/858

NHS REC Form

Reference:
14/WA/1034

IRAS Version 3.5

Yes No

11. Will identifiable patient data be accessed outside the care team without prior consent at any stage of the project (including identification of potential participants)?

Yes No

Integrated Research Application System
Application Form for Research administering questionnaires/interviews for quantitative analysis or mixed methodology study



Application to NHS/HSC Research Ethics Committee

The Chief Investigator should complete this form. Guidance on the questions is available wherever you see this symbol displayed. We recommend reading the guidance first. The complete guidance and a glossary are available by selecting [Help](#).

Please define any terms or acronyms that might not be familiar to lay reviewers of the application.

Short title and version number: (maximum 70 characters - this will be inserted as header on all forms)
 The role of coping and mindfulness on burnout and occupational stress

Please complete these details after you have booked the REC application for review.

REC Name:
NRES Wales REC 5

REC Reference Number:
14/WA/1034

Submission date:
03/06/2014

PART A: Core study information

1. ADMINISTRATIVE DETAILS

A1. Full title of the research:

The role of mindfulness and coping on burnout and occupational stress amongst health care professionals employed within forensic inpatient settings

A2-1. Educational projects

Name and contact details of student(s):

Name and contact details of academic supervisor(s):

Academic supervisor 1

	Title	Forename/Initials	Surname
	Dr	Katie Ann	Elliott
Address	North Wales Forensic Psychiatric Service Ty Llywelyn Medium Secure Unit Bryn Y Neuadd Hospital, Llanfairfechan, Conwy		
Post Code	LL33 OHH		
E-mail	katie.elliott@nhs.wales.uk		

NHS REC Form

Reference:
14/WA/1034

IRAS Version 3.5

Telephone 01248 682123
Fax 01248 682146

Academic supervisor 2

Title Forename/Initials Surname
Dr Robin Owen
Address North Wales Forensic Psychiatric Service
Ty Llywelyn Medium Secure Unit
Ysbyty Bryn y Neuadd, Llanfairfechan, Conwy
Post Code LL33 OHH
E-mail robin.owen2@wales.nhs.uk
Telephone 01248 682133
Fax 01248 682146

Please state which academic supervisor(s) has responsibility for which student(s):

Please click "Save now" before completing this table. This will ensure that all of the student and academic supervisor details are shown correctly.

Student(s)	Academic supervisor(s)
------------	------------------------

A copy of a current CV for the student and the academic supervisor (maximum 2 pages of A4) must be submitted with the application.

A2-2. Who will act as Chief Investigator for this study?

- Student
 Academic supervisor
 Other

A3-1. Chief Investigator:

Title Forename/Initials Surname
Miss Sarah Angela Kriakous
Post Trainee Clinical Psychologist
Qualifications BSc in Psychology
MSc in Applied Forensic Psychol
Employer Betsi Cadwaladr University Health Board
Work Address North Wales Clinical Psychology Programme
Bangor University, 43 College Road
Bangor
Post Code LL57 2DG
Work E-mail psp0cd@bangor.ac.uk
* Personal E-mail skriakous@hotmail.com
Work Telephone 447825662463
* Personal Telephone/Mobile 447825662463
Fax

* This information is optional. It will not be placed in the public domain or disclosed to any other third party without prior consent.

A copy of a current CV (maximum 2 pages of A4) for the Chief Investigator must be submitted with the application.

NHS REC Form

Reference:
14/WA/1034

IRAS Version 3.5

A4. Who is the contact on behalf of the sponsor for all correspondence relating to applications for this project?
This contact will receive copies of all correspondence from REC and R&D reviewers that is sent to the CI.

	Title	Forename/Initials	Surname
	Mr	Hefin	Francis
Address	School of Psychology Adelad Brigantia Penrallt Road Gwynedd		
Post Code	LL57 2AS		
E-mail	h.francis@bangor.ac.uk		
Telephone	01248 388339		
Fax	01248 382599		

A5-1. Research reference numbers. *Please give any relevant references for your study:*

Applicant's/organisation's own reference number, e.g. R & D (if available): 2014-1138

Sponsor's/protocol number:

Protocol Version:

Protocol Date:

Funder's reference number:

Project website: <https://intranet.psychology.bangor.ac.uk/ethics/accounts/login/?next=/et>

Additional reference number(s):

Ref. Number	Description	Reference Number
-------------	-------------	------------------

Registration of research studies is encouraged wherever possible. You may be able to register your study through your NHS organisation or a register run by a medical research charity, or publish your protocol through an open access publisher. If you have registered your study please give details in the "Additional reference number(s)" section.

A5-2. Is this application linked to a previous study or another current application?

Yes No

Please give brief details and reference numbers.

2. OVERVIEW OF THE RESEARCH

To provide all the information required by review bodies and research information systems, we ask a number of specific questions. This section invites you to give an overview using language comprehensible to lay reviewers and members of the public. Please read the guidance notes for advice on this section.

A6-1. Summary of the study. *Please provide a brief summary of the research (maximum 300 words) using language easily understood by lay reviewers and members of the public. Where the research is reviewed by a REC within the UK Health Departments Research Ethics Service, this summary will be published on the website of the National Research Ethics Service following the ethical review.*

Working within forensic settings can be emotionally challenging and stressful, however, there is a lack of research in this area that focuses on forensic inpatient settings and a range of disciplines. This study will, therefore, aim to explore coping, mindfulness, burnout and occupational stress amongst health care professionals employed within forensic inpatient settings. It will employ a postal questionnaire design and professionals will be recruited from low and

Date: 03/06/2014

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142705/617821/1/858

NHS REC Form

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14/WA/1034

IRAS Version 3.5

medium secure forensic services in Wales. This research will hopefully help us to understand the nature of the relationship between coping and mindfulness on occupational burnout and stress, and it will also inform our clinical practice regarding the design of future interventions to help reduce occupational burnout and stress.

A6-2. Summary of main issues. *Please summarise the main ethical, legal, or management issues arising from your study and say how you have addressed them.*

Not all studies raise significant issues. Some studies may have straightforward ethical or other issues that can be identified and managed routinely. Others may present significant issues requiring further consideration by a REC, R&D office or other review body (as appropriate to the issue). Studies that present a minimal risk to participants may raise complex organisational or legal issues. You should try to consider all the types of issues that the different reviewers may need to consider.

Confidentiality: This research project will ensure that the participants anonymity and confidentiality will be maintained at all times. Completed postal research packs will be stored under secure conditions, in locked cabinets in the researchers supervisors office at Ty Llywelyn Medium Secure Unit.

Anonymity: The completed research packs will not contain any identifiers which will enable anyone to trace back the data collected to the participants. All participants will be provided with a 'Code Number Card', this is anonymous and only known to the participant. The researcher will write the code number onto the front page (top right hand corner) of each questionnaire booklet. Participants are encouraged to keep their code number for future reference, in the eventuality they would like the researcher to remove their data from the study. The data will be inputted into a spreadsheet with each code number and it will be subject to statistical analysis. The participants' organisations will not have access to the questionnaires at any time and participants will not be identified in any reports.

Consent: A signed consent form will not be obtained. Implicit consent will be provided by the participants completing the necessary questionnaires and returning them to the researcher. This will increase the participants' confidentiality and hopefully reduce the likelihood of a poor response rate.

Data Storage: The raw data will be securely stored in a locked cabinet at Ty Llywelyn Medium Secure Unit by the researcher's supervisor. The electronic data analysis file will be kept stored on NHS or personal computers that are password protected. There will be no information included on the electronic data analysis file to potentially identify participants. The data will be inputted into a spreadsheet with each code number and it will be subject to statistical analysis.

Risks & Hazards: It is unlikely that participants will find completing the items in the postal research packs distressing. To help manage this eventuality all participants will be provided with a Contact Sheet in their research packs which includes the contact details for support services available within their organisations (e.g. Occupational Health and/or Counselling Services).

Participants may disclose drug abuse in the Background Information Questionnaire. This is something that cannot be addressed in the empirical study but emotional support or counselling contact numbers will be provided in the Participant Information Sheet that will be included in the postal research packs.

The research may find that professionals from particular hospitals or professional groups have elevated levels of burnout and/or occupational stress; this cannot be addressed in the empirical study but will be fed back to relevant research contacts or Heads of Departments. Relevant contact numbers for participants will again be provided.

Participants may also disclose work related issues that are causing them ongoing stress or may perhaps be breaching hospital or company policies; again this information will need to be treated with caution and fed back to the relevant people.

A6-3. Proportionate review of REC application *The initial project filter has identified that your study may be suitable for proportionate review by a REC sub-committee. Please consult the current guidance notes from NRES and indicate whether you wish to apply through the proportionate review service or, taking into account your answer to A6-2, you consider there are ethical issues that require consideration at a full REC meeting.*

Yes - proportionate review No - review by full REC meeting

Further comments (optional):

There are ethical issues noted in answer A6-2 that may require review by the full REC meeting. In addition, the nature of the study is investigating staff burnout and occupational stress which is a sensitive issue.

Note: This question only applies to the REC application.

3. PURPOSE AND DESIGN OF THE RESEARCH

A7. Select the appropriate methodology description for this research. Please tick all that apply.

- Case series/ case note review
- Case control
- Cohort observation
- Controlled trial without randomisation
- Cross-sectional study
- Database analysis
- Epidemiology
- Feasibility/ pilot study
- Laboratory study
- Metanalysis
- Qualitative research
- Questionnaire, interview or observation study
- Randomised controlled trial
- Other (please specify)

A10. What is the principal research question/objective? Please put this in language comprehensible to a lay person.

The primary aim of the research will be to investigate the role of coping and mindfulness on burnout and occupational stress in health care professionals that are employed within an inpatient forensic setting.

A11. What are the secondary research questions/objectives if applicable? Please put this in language comprehensible to a lay person.

The following predictions have been made for the present study:

- A) Health care professionals employed in an inpatient forensic setting will report elevated levels of burnout and occupational stress compared with mean or norm scores for other groups of health care professionals.
- B) Health care professionals employed in an inpatient forensic setting that report reduced levels of mindfulness will also report increased levels of burnout and occupational stress.
- C) Health care professionals employed in an inpatient forensic setting that report increased use of maladaptive coping strategies will also report increased levels of burnout and occupational stress.
- D) Health care professionals employed in an inpatient forensic setting that report increased use of adaptive coping strategies will also report increased use of mindfulness and reduced levels of perceived stress.

A12. What is the scientific justification for the research? Please put this in language comprehensible to a lay person.

Working in forensic services can be emotionally challenging and stressful; subsequently, this can then lead to staff burnout. Existing studies have looked at occupational stress within forensic services; however, many have focused solely on nurses working within community settings. The present study will, therefore, build on existing research by exploring burnout and occupational stress in a number of staff disciplines who are employed within forensic inpatient services in Wales.

Despite the growing body of literature investigating the effectiveness of mindfulness based interventions with health care professionals, there is no research that focuses on coping, mindfulness, burnout and occupational stress in professionals employed within forensic inpatient settings. This research project, therefore, aims to add to the evidence base by exploring the nature of the relationship between mindfulness, coping and stress and whether mindfulness could be a possible intervention to help improve staff coping and reduce the risk of staff burnout.

A13. Please summarise your design and methodology. *It should be clear exactly what will happen to the research participant, how many times and in what order. Please complete this section in language comprehensible to the lay person. Do not simply reproduce or refer to the protocol. Further guidance is available in the guidance notes.*

Design: Postal research packs will be distributed to health care professionals that work within forensic inpatient settings in Wales. A questionnaire design will be employed as the postal research packs will include a Background Information Questionnaire, Instruction Sheet, Contacts Sheet and four different self-report questionnaires (see copies enclosed).

Participants: Potential participants will be health care professionals that are employed within six different secure hospitals in Wales that all provide a forensic service. Professionals will include individuals from different disciplines including clerical staff, nursing, occupational therapy, psychiatry, psychology, social workers, ward based support staff and any other therapists. All adults will be participants aged 18-65 years. 80-100 health care professionals will be required for the study, therefore, due to the poor response rates associated with postal surveys the researcher will aim to distribute approximately 400 research packs. Participants will be recruited from a number of low and medium secure hospitals in Wales. To date only one research site has been confirmed:

Ty Llywelyn Medium Secure Unit, Bryn Y Neuadd Hospital, Conwy, Llanfairfechan, Conwy LL33 0HH

Independent hospitals and other hospitals within NHS Wales have been approached regarding the research, therefore, the Chief Investigator is currently going through the necessary protocols in order to confirm the research sites.

A research contact will be provided for each research site. It may also be required for the researcher to visit the different sites and deliver a presentation with the aim of promoting the research and to encourage participant recruitment.

Procedures: The procedures employed within this research project will include the following stages:

1. The research contact within each hospital will distribute the research packs, this will be posted to all staff via their internal mail system.
2. The participants will read the Participant Information Sheet. If they decide to take part in the research they will then read the Instruction Sheet and Contacts Sheet.
3. The participants will then be asked to complete the Background Information Questionnaire and the four other assessment measures. It is anticipated this will take approximately 30 minutes.
4. The participants will be provided with a 'code number card' inside their research packs which is anonymous and only known to them. They will be advised to keep this code for future reference and in the eventuality they would like their information later removed from the study.
5. The participants will return the completed questionnaires in the prepaid S.A.E.
6. Research contacts in each hospital will be provided with a reminder letter by the researcher to distribute to all staff one month after the initial distribution of the research packs. This is to encourage the return of completed questionnaires.
7. A summary of the research findings and recommendations will be sent to the research contacts at each hospital to distribute to all of their staff teams.

Measures: This research project will employ the following questionnaires and assessment measures: Background Information Questionnaire, The Maslach Burnout Inventory (MBI) – Human Services Survey, The Staff Stressor Questionnaire (SSQ), The Brief Cope Inventory (BCI) and The Five Facet Mindfulness Questionnaire-Short Form (FFMQ-SF).

Timetable: It is anticipated that the data collection will commence in September 2014 until December 2014. The research will form part of the Chief Investigators Clinical Psychology Doctoral thesis and the final submission deadline will be June 2015.

A14-1. In which aspects of the research process have you actively involved, or will you involve, patients, service users, and/or their carers, or members of the public?

- Design of the research
- Management of the research
- Undertaking the research
- Analysis of results
- Dissemination of findings
- None of the above

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Give details of involvement, or if none please justify the absence of involvement.

Health care professionals that work within a forensic inpatient setting will be completing the questionnaires as part of the research.

4. RISKS AND ETHICAL ISSUES

RESEARCH PARTICIPANTS

A17-1. Please list the principal inclusion criteria (list the most important, max 5000 characters).

Potential participants will be health care professionals that are employed within six different secure hospitals in Wales that all provide a forensic service. Professionals will include individuals from different disciplines including clerical staff, nursing, occupational therapy, psychiatry, psychology, social workers, ward based support staff and any other therapists. Hospitals will be approached by the researchers in order to recruit participants for the research.

A17-2. Please list the principal exclusion criteria (list the most important, max 5000 characters).

NA

RESEARCH PROCEDURES, RISKS AND BENEFITS

A18. Give details of all non-clinical intervention(s) or procedure(s) that will be received by participants as part of the research protocol. *These include seeking consent, interviews, non-clinical observations and use of questionnaires.*

Please complete the columns for each intervention/procedure as follows:

1. Total number of interventions/procedures to be received by each participant as part of the research protocol.
2. If this intervention/procedure would be routinely given to participants as part of their care outside the research, how many of the total would be routine?
3. Average time taken per intervention/procedure (minutes, hours or days)
4. Details of who will conduct the intervention/procedure, and where it will take place.

Intervention or procedure	1	2	3	4
Questionnaires	N/A	N/A	30 minutes	This research project involves the completion of a postal research pack which includes a Background Information Questionnaire and four further assessment measures for each participant. The postal research packs will be distributed to staff teams employed within identified inpatient forensic units by the research contacts. The participants will be allowed to complete the postal research packs during work-time and will then return them in the completed prepaid S.A.E.

A21. How long do you expect each participant to be in the study in total?

Approximately 30 minutes.

A22. What are the potential risks and burdens for research participants and how will you minimise them?

For all studies, describe any potential adverse effects, pain, discomfort, distress, intrusion, inconvenience or changes to lifestyle. Only describe risks or burdens that could occur as a result of participation in the research. Say what steps would be taken to minimise risks and burdens as far as possible.

It is unlikely that participants will find completing the items in the postal research packs distressing. To help manage this eventuality all participants will be provided with a Contact Sheet in their research packs which includes the contact details for support services available within their organisations (e.g. Occupational Health and/or Counselling Services).

A23. Will interviews/ questionnaires or group discussions include topics that might be sensitive, embarrassing or upsetting, or is it possible that criminal or other disclosures requiring action could occur during the study?

Yes No

If Yes, please give details of procedures in place to deal with these issues:

It is unlikely that participants will find completing the items in the postal research packs embarrassing or upsetting, however, it may remind some individuals of work related stressors they have experienced. If participants do find the process distressing they will be able to discontinue at any time. To help manage this eventuality all participants will be provided with a Contact Sheet in their research packs which includes the contact details for support services available within their organisations (e.g. Occupational Health and/or Counselling Services).

A24. What is the potential for benefit to research participants?

No direct benefits are anticipated for the research participants themselves, however, they will hopefully receive indirect benefits via the inpatient services where they are employed. The benefits are as follows:

1. The research demonstrates an interest in a range of professionals employed within forensic inpatient settings, which as a group have not been focused upon by other researchers.
2. The survey provides participants the opportunity to express their views about their work and the organisation they are employed within and doing so in an anonymous way to service managers.
3. The research findings will identify occupational stressors and overall stress levels amongst health care professionals employed within forensic inpatient settings.
4. The research findings will help identify both adaptive and maladaptive coping strategies in health care professionals employed within forensic inpatient settings.
5. The research findings will help us further understand the nature of the relationship between coping, mindfulness and stress.
6. The research findings will help inform clinical practice regarding potential interventions that could be implemented to better support staff teams and reduce occupational stress and burnout amongst health care professionals that work within forensic inpatient settings.

A26. What are the potential risks for the researchers themselves? (if any)

There are no potential risks for the researchers themselves.

RECRUITMENT AND INFORMED CONSENT

In this section we ask you to describe the recruitment procedures for the study. Please give separate details for different study groups where appropriate.

A27-1. How will potential participants, records or samples be identified? Who will carry this out and what resources will be used? For example, identification may involve a disease register, computerised search of GP records, or review of medical records. Indicate whether this will be done by the direct healthcare team or by researchers acting under arrangements with the responsible care organisation(s).

Participants: Participants will include health care professionals that are employed within forensic inpatient services in Wales. Professionals will include individuals from different disciplines including clerical staff, nursing, occupational therapy, psychiatry, psychology, social workers, ward based support staff and any other therapists. All adults will be participants aged 18-75 years.

Number of participants: 80-100 health care professionals will be required for the study, therefore, due to the poor response rates associated with postal surveys the researcher will aim to distribute approximately 400 research packs.

Recruitment of forensic inpatient units: Participants will be recruited from a number of low and medium secure hospitals in Wales. To date only one research site has been confirmed:

Ty Llywelyn Medium Secure Unit, Bryn Y Neuadd Hospital, Conwy, Llanfairfechan, Conwy LL33 0HH

Independent hospitals and other hospitals within NHS Wales have been approached regarding the research, therefore, the Chief Investigator is currently going through the necessary protocols in order to confirm the research

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sites.

A research contact will be provided for each research site. It may also be required for the researcher to visit the different sites and deliver a presentation with the aim of promoting the research and to encourage participant recruitment.

Recruitment of participants: Due to data protection issues the relevant research contact will be responsible for distributing the postal research packs to all their staff team. The research contact will be responsible for putting the necessary address labels onto the individual research packs and mailing them, via their internal mail system, to every member of their staff team. Participants will be provided with a prepaid S.A.E within their postal research packs to return the completed questionnaires to the researcher. Participants will be informed in the Participant Information Sheet that participation in the research study is voluntary and that they can withdraw at any time.

Summary of recruitment process: Recruiting potential participants and distributing the necessary research packs will involve the following stages:

1. The research contacts will inform the researcher exactly how many members of staff are currently employed within their service.
2. The researcher will post the necessary number of research packs to each research contact via Royal Mail.
3. Appropriate name labels and addresses will be placed onto the research packs by the research contacts (or their secretaries).
4. The research packs will then be distributed to all staff members via the service's internal mail system.
5. The participants will receive their research packs at their place of work.
6. The participants will complete their research packs at their place of work.
7. The participants will return their research packs to the researcher in the prepaid S.A.E via Royal Mail.

A27-2. Will the identification of potential participants involve reviewing or screening the identifiable personal information of patients, service users or any other person?

Yes No

Please give details below:

The participants will be provided with a 'code number card' inside their research packs which is anonymous and only known to them. They will be advised to keep this code for future reference and in the eventuality they would like their information later removed from the study.

A28. Will any participants be recruited by publicity through posters, leaflets, adverts or websites?

Yes No

A29. How and by whom will potential participants first be approached?

Recruitment of forensic inpatient units: Participants will be recruited from a number of low and medium secure hospitals in Wales. To date only one research site has been confirmed:

Ty Llywelyn Medium Secure Unit, Bryn Y Neuadd Hospital, Conwy, Llanfairfechan, Conwy LL33 0HH

Independent hospitals and other hospitals within NHS Wales have been approached regarding the research, therefore, the Chief Investigator is currently going through the necessary protocols in order to confirm the research sites.

A research contact will be provided for each research site. It may also be required for the researcher to visit the different sites and deliver a presentation with the aim of promoting the research and to encourage participant recruitment.

Recruitment of participants: Due to data protection issues the relevant research contact at each unit will be responsible for distributing the postal research packs to all their staff team. Participants will be provided with a prepaid S.A.E within their postal research packs to return the completed questionnaires to the researcher.

A30-1. Will you obtain informed consent from or on behalf of research participants?

Yes No

If you will be obtaining consent from adult participants, please give details of who will take consent and how it will be

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done, with details of any steps to provide information (a written information sheet, videos, or interactive material). Arrangements for adults unable to consent for themselves should be described separately in Part B Section 6, and for children in Part B Section 7.

If you plan to seek informed consent from vulnerable groups, say how you will ensure that consent is voluntary and fully informed.

Information: Participants will be provided with a 'Participant Information Sheet' (please see enclosed) in their postal research packs. It will provide information about the aims and requirements of the research study and information relating to confidentiality and the right to withdraw from the research.

Contacts: The participants will be provided with the contact details of the Chief Investigator and her supervisor in the eventuality they would like to ask for further information or clarify anything relating to the research project.

Consent Form: A signed consent form will not be obtained. Implicit consent will be provided by the participants completing the necessary questionnaires and returning them to the researcher. This will increase the participants' confidentiality and hopefully reduce the likelihood of a poor response rate.

If you are not obtaining consent, please explain why not.

N/A

Please enclose a copy of the information sheet(s) and consent form(s).

A30-2. Will you record informed consent (or advice from consultees) in writing?

Yes No

If No, how will it be recorded?

A signed consent form will not be obtained. Implicit consent will be provided by the participants completing the necessary questionnaires and returning them to the researcher. This will increase the participants' confidentiality and hopefully reduce the likelihood of a poor response rate.

A31. How long will you allow potential participants to decide whether or not to take part?

The participants will receive the postal research packs at work, they will have one month to decide whether they would like to participate in the research project, to complete the necessary forms and then return them in the prepaid S.A.E to the researcher.

A33-1. What arrangements have been made for persons who might not adequately understand verbal explanations or written information given in English, or who have special communication needs?(e.g. translation, use of interpreters)

English Language: The participants included in the research project will be health care professionals employed within forensic inpatient services in Wales, therefore, it is not anticipated participants will not be able to understand written English. Participants will be required to write in English as part of their clinical duties.

Welsh Language: In accordance with the Welsh Language Act (1993), all written documents included in the research packs will be translated from English to Welsh by the University of Bangor Translation Department. However, it will not be possible to translate the four assessment measures into Welsh due to the potential problem of losing important aspects of their meaning.

Both English and Welsh documentation (Participant Information Sheet, Instruction Sheet and Contact Sheet) will be included in the postal research packs.

A33-2. What arrangements will you make to comply with the principles of the Welsh Language Act in the provision of information to participants in Wales?

Welsh Language: In accordance with the Welsh Language Act (1993), all written documents included in the research packs will be translated from English to Welsh by the University of Bangor Translation Department. However, it will not be possible to translate the four assessment measures because into Welsh due to the potential problem of losing important aspects of their meaning.

Both English and Welsh documentation (Participant Information Sheet, Instruction Sheet and Contact Sheet) will be

included in the postal research packs.

A35. What steps would you take if a participant, who has given informed consent, loses capacity to consent during the study? Tick one option only.

- The participant and all identifiable data or tissue collected would be withdrawn from the study. Data or tissue which is not identifiable to the research team may be retained.
- The participant would be withdrawn from the study. Identifiable data or tissue already collected with consent would be retained and used in the study. No further data or tissue would be collected or any other research procedures carried out on or in relation to the participant.
- The participant would continue to be included in the study.
- Not applicable – informed consent will not be sought from any participants in this research.
- Not applicable – it is not practicable for the research team to monitor capacity and continued capacity will be assumed.

Further details:

CONFIDENTIALITY

In this section, personal data means any data relating to a participant who could potentially be identified. It includes pseudonymised data capable of being linked to a participant through a unique code number.

Storage and use of personal data during the study

A36. Will you be undertaking any of the following activities at any stage (including in the identification of potential participants)? (Tick as appropriate)

- Access to medical records by those outside the direct healthcare team
- Electronic transfer by magnetic or optical media, email or computer networks
- Sharing of personal data with other organisations
- Export of personal data outside the EEA
- Use of personal addresses, postcodes, faxes, emails or telephone numbers
- Publication of direct quotations from respondents
- Publication of data that might allow identification of individuals
- Use of audio/visual recording devices
- Storage of personal data on any of the following:
- Manual files including X-rays
 - NHS computers
 - Home or other personal computers
 - University computers
 - Private company computers
 - Laptop computers

Further details:

The completed research packs will not contain any identifiers which will enable anyone to trace back the data collected to the participants. All participants will be provided with a 'Code Number Card', this is anonymous and only known to the participant. The researcher will write the code number onto the front page (top right hand corner) of each questionnaire booklet. Participants are encouraged to keep their code number for future reference, in the eventuality they would like the researcher to remove their data from the study. The data will be inputted into a spreadsheet with each code number and it will be subject to statistical analysis. The participants' organisations will not have access to

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the questionnaires at any time and participants will not be identified in any reports.

A38. How will you ensure the confidentiality of personal data? Please provide a general statement of the policy and procedures for ensuring confidentiality, e.g. anonymisation or pseudonymisation of data.

In line with the NHS and Betsi Cadwaladr University Health Board Data Protection & Confidentiality Policies, the researchers will ensure that the research project complies with the Data Protection Act and that the participants' confidentiality and anonymity will be maintained at all times.

A40. Who will have access to participants' personal data during the study? Where access is by individuals outside the direct care team, please justify and say whether consent will be sought.

The researcher and her supervisor will have access to the data.

Storage and use of data after the end of the study

A43. How long will personal data be stored or accessed after the study has ended?

- Less than 3 months
 3 – 6 months
 6 – 12 months
 12 months – 3 years
 Over 3 years

INCENTIVES AND PAYMENTS

A46. Will research participants receive any payments, reimbursement of expenses or any other benefits or incentives for taking part in this research?

- Yes No

A47. Will individual researchers receive any personal payment over and above normal salary, or any other benefits or incentives, for taking part in this research?

- Yes No

A48. Does the Chief Investigator or any other investigator/collaborator have any direct personal involvement (e.g. financial, share holding, personal relationship etc.) in the organisations sponsoring or funding the research that may give rise to a possible conflict of interest?

- Yes No

NOTIFICATION OF OTHER PROFESSIONALS

A49-1. Will you inform the participants' General Practitioners (and/or any other health or care professional responsible for their care) that they are taking part in the study?

- Yes No

If Yes, please enclose a copy of the information sheet/letter for the GP/health professional with a version number and date.

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PUBLICATION AND DISSEMINATION

A50. Will the research be registered on a public database?

Yes No

Please give details, or justify if not registering the research.
NA

Registration of research studies is encouraged wherever possible. You may be able to register your study through your NHS organisation or a register run by a medical research charity, or publish your protocol through an open access publisher. If you are aware of a suitable register or other method of publication, please give details. If not, you may indicate that no suitable register exists. Please ensure that you have entered registry reference number(s) in question A5-1.

A51. How do you intend to report and disseminate the results of the study? Tick as appropriate:

- Peer reviewed scientific journals
 Internal report
 Conference presentation
 Publication on website
 Other publication
 Submission to regulatory authorities
 Access to raw data and right to publish freely by all investigators in study or by Independent Steering Committee on behalf of all investigators
 No plans to report or disseminate the results
 Other (please specify)

Results from the research study will be disseminated in a number of ways:

1. The results of the study will be written up and submitted in a formal report in June 2015 as part of the researchers' thesis for her Clinical Psychology Doctorate.
2. A 15 minute PowerPoint presentation on the empirical study will also be presented at the North Wales Clinical Psychology Programmes' annual conference in September 2015.
3. The preferred format for the feedback of the research findings will be discussed with the research contact at each unit, however, it is anticipated that a report will be completed that summarises the main findings from the study. The report will then be distributed to the research contacts in each hospital so that the findings can be fed back to Operational Managers, Heads of Departments, multi-disciplinary team members and the employees that took part in the research.
4. It is hoped that the research findings will be published in a peer reviewed scientific journal.

A53. Will you inform participants of the results?

Yes No

Please give details of how you will inform participants or justify if not doing so.
The preferred format for the feedback of the research findings will be discussed with the research contact at each unit, however, it is anticipated that a report will be completed that summarises the main findings from the study. The report will then be distributed to the research contacts in each hospital so that the research findings can be disseminated to all staff that were invited to take part in the research.

5. Scientific and Statistical Review

A54. How has the scientific quality of the research been assessed? Tick as appropriate:

- Independent external review

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- Review within a company
 Review within a multi-centre research group
 Review within the Chief Investigator's institution or host organisation
 Review within the research team
 Review by educational supervisor
 Other

Justify and describe the review process and outcome. If the review has been undertaken but not seen by the researcher, give details of the body which has undertaken the review:

1. The research project proposal has been reviewed and approved by the researchers supervisor, Dr. Katie Ann Elliott.
2. The research project proposal has been reviewed and approved by Dr. Richard Hastings, previous Research Director of North Wales Clinical Psychology Programme.

For all studies except non-doctoral student research, please enclose a copy of any available scientific critique reports, together with any related correspondence.

For non-doctoral student research, please enclose a copy of the assessment from your educational supervisor/ institution.

A56. How have the statistical aspects of the research been reviewed? Tick as appropriate:

- Review by independent statistician commissioned by funder or sponsor
 Other review by independent statistician
 Review by company statistician
 Review by a statistician within the Chief Investigator's institution
 Review by a statistician within the research team or multi-centre group
 Review by educational supervisor
 Other review by individual with relevant statistical expertise
 No review necessary as only frequencies and associations will be assessed – details of statistical input not required

In all cases please give details below of the individual responsible for reviewing the statistical aspects. If advice has been provided in confidence, give details of the department and institution concerned.

	Title Forename/Initials Surname
	Dr Katie Ann Elliott
Department	Clinical Forensic Psychology Department
Institution	North Wales Forensic Psychiatric Service, Ty Llywelyn Medium Secure Unit
Work Address	Ysbyty Bryn y Neuadd Llanfairfechan Conwy
Post Code	LL33 OHH
Telephone	01248 682123
Fax	01248 682146
Mobile	
E-mail	katie.elliott@wales.nhs.uk

Please enclose a copy of any available comments or reports from a statistician.

A57. What is the primary outcome measure for the study?

The research project will employ the following questionnaires and outcome measures:

- 1) The Background Information Questionnaire that focuses on demographic, personal and occupational details.

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2) The Maslach Burnout Inventory (MBI) – Human Services Survey (Maslach et al, 1996): A 22 item questionnaire that assesses three core dimensions of burnout including emotional exhaustion (EE), depersonalisation (DP) and reduced personal accomplishment (PA). Burnout is present with high scores on the EE and DP scales and low scores on the PA scale. Reliability coefficients for the subscales were as follows: .90 for EE, .79 for DP and .71 for PA. The test-retest reliability for the subscales was as follows: .82 for EE, .60 for DP and .80 for PA (Maslach et al, 1996). Elliott and Daley (2012) reported a Cronbach's coefficient alpha of .78 for the MBI for health care professionals that were employed within forensic inpatient settings.

2) The Staff Stressor Questionnaire (SSQ) (Hatton et al, 1999): A 33 item questionnaire that assesses work stressors among health care professionals. The SSQ has seven subscales: client's challenging behaviour, client's poor skills, lack of staff support, lack of resources, low job status, bureaucracy and work-home conflicts. Higher scores on the SSQ suggest higher levels of perceived stress. Hatton et al (1999) found that all subscales had adequate internal reliability. Elliott and Daley (2012) reported a Cronbach's coefficient alpha of .82 for the SSQ for health care professionals that were employed within forensic inpatient settings.

3) The Brief Cope Inventory (BCI) (Carver, 1997): A 28 item questionnaire that assesses a broad range of coping strategies. The BCI originally had 14 subscales; however, Hastings and Brown (2002) found good levels of reliability for two dimensions of staff adaptive and maladaptive coping with teachers and support staff working in special schools for children with mental retardation. The adaptive coping subscale was made up of 16 items (adaptive coping, planning, positive reframing, acceptance, humor, religion, using emotional support and using instrumental support) and Cronbach's alpha was 0.83. The maladaptive coping subscale was made up of 12 items (self-distraction, denial, venting of emotions, substance use, behavioural disengagement and self-blame) and Cronbach's alpha was 0.75. These two dimensions will be used in the present study.

4) The Five Facet Mindfulness Questionnaire-Short Form (FFMQ-SF) (Bohlmeijer et al, 2011): A 24 item questionnaire designed to measure mindfulness. The FFMQ-SF includes five sub-scales and they have all demonstrated adequate internal consistency: observing (.78), describing (.91), acting with awareness (.86), non-judging of inner experience (.86) and non-reactivity to inner experience (.73). The FFMQ-SF was developed and assessed in a sample of adults with clinically relevant symptoms of depression and anxiety. It was then cross validated in an independent sample of patients with fibromyalgia (Bohlmeijer et al, 2011). Higher scores indicate more mindfulness.

References

Bohlmeijer, E., ten Klooster, P.M., Fledderus, M., Veehof, M., & Baer, R. (2011). Psychometric properties of the five facet mindfulness questionnaire in depressed adults and development of a short form. *Assessment*, 18 (3), 308-320.

Carver, C. S. (1997). You want to measure coping but your protocol's too long: Consider the Brief COPE. *International Journal of Behavioural Medicine*, 4, 92–100.

Elliott, K.A., & Daley, D. (2013). Stress, coping, and psychological well-being among forensic health care professionals. *Legal and Criminological Psychology*, 18 (2), 187–204.

Hastings, R.P. & Brown, T. (2002). Coping strategies and the impact of challenging behaviors on special educators' burnout. *Mental Retardation*, 40 (2), 148-156.

Hatton, C., Rivers, M., Mason, H., Kiernan, C., Emerson, E., Alborz, A., & Reeves, D. (1999). Staff stressors and staff outcomes in services for adults with intellectual disabilities: The staff stressor questionnaire. *Research in Developmental Disabilities*, 20, 269–285.

Maslach, C., Jackson, S. E., & Leiter, M. P. (1996). *Maslach Burnout Inventory manual* (3rd ed.). Palo Alto: Consulting Psychologists Press, Inc.

A58. What are the secondary outcome measures?(if any)

NA

A59. What is the sample size for the research? How many participants/samples/data records do you plan to study in total? If there is more than one group, please give further details below.

Total UK sample size: 100
Total international sample size (including UK):
Total in European Economic Area:

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Further details:

The sample size has been discussed with Dr. Richard Hastings, previous Research Director at the North Wales Clinical Psychology Programme. Despite this being an estimated calculation, a sample size of 100 participants would be adequate to detect a medium-sized effect in a multiple regression analysis, assuming that eight predictors are used (Cohen, 1992).

Reference

Cohen, J. (1992). A Power Primer. *Psychological Bulletin*, 112, 1, 155-159

A60. How was the sample size decided upon? *If a formal sample size calculation was used, indicate how this was done, giving sufficient information to justify and reproduce the calculation.*

Due to postal research packs being used in the study, it is anticipated that a 30% response rate will be achieved. Elliott & Daley (2013) obtained a 32% response rate, from a total of 422 packs that were distributed to health care professionals employed within forensic inpatient settings, 135 were returned. For the present study it is anticipated that 400 questionnaires will need to be distributed in order for 80-100 questionnaires to be returned.

Reference

Elliott, K.A., & Daley, D. (2013). Stress, coping, and psychological well-being among forensic health care professionals. *Legal and Criminological Psychology*, 18 (2), 187–204.

A61. Will participants be allocated to groups at random?

Yes No

A62. Please describe the methods of analysis (statistical or other appropriate methods, e.g. for qualitative research) by which the data will be evaluated to meet the study objectives.

The Background Information Questionnaire and the four assessment measures will produce quantitative data. Data will be analysed using SPSS, a statistical package typically used in Social Sciences.

Data Analysis plan:

1. Internal consistency: Cronbach's alpha will be calculated for all assessment measures and their subscales.
2. Descriptive data: Scores for all assessment measures will be presented.
3. Group comparison tests: Will be used to explore any differences between groups, e.g. work context and client group staff mainly work with.
4. Associations between main outcome measures: Correlations will be used to explore associations between outcome measures.
5. Univariate analysis of correlates on burnout: Univariate tests will be used to explore associations between psychological (e.g. coping, mindfulness, occupational stress) and background variables (e.g. age, sex) and the outcome measure burnout. Variables with statistically significant associations will be used for inclusion in the regression analysis.
6. Exploratory regression analysis: Potential predictors will be selected from the univariate analyses for the outcome measure burnout.
7. Univariate analysis of correlates on occupational stress: Univariate tests will be used to explore associations between psychological (e.g. coping, mindfulness) and background variables (e.g. age, sex) and the outcome measure occupational stress. Variables with statistically significant associations will be used for inclusion in the regression analysis.
7. Exploratory regression analysis: Potential predictors will be selected from the univariate analyses for the outcome measure occupational stress.

6. MANAGEMENT OF THE RESEARCH

A63. Other key investigators/collaborators. *Please include all grant co-applicants, protocol co-authors and other key members of the Chief Investigator's team, including non-doctoral student researchers.*

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	Title Forename/Initials Surname
	Dr Katie Ann Elliott
Post	Consultant Clinical Psychologist
Qualifications	BSc in Psychology MSc in Forensic Psychology Doctorate in Clinical Psychology
Employer	Betsi Cadwaladr University Health Board
Work Address	North Wales Forensic Psychiatric Service Ty Llywelyn Medium Secure Unit Ysbyty Bryn y Neuadd, Llanfairfechan, Conwy
Post Code	LL33 OHH
Telephone	01248 682123
Fax	01248 682146
Mobile	
Work Email	katie.elliott@wales.nhs.uk
	Title Forename/Initials Surname
	Dr Robin Owen
Post	Clinical Psychologist
Qualifications	BSc in Psychology Doctorate in Clinical Psychology
Employer	Betsi Cadwaladr University Health Board
Work Address	North Wales Forensic Psychiatric Service Ty Llywelyn Medium Secure Unit Ysbyty Bryn y Neuadd, Llanfairfechan, Conwy
Post Code	LL33 OHH
Telephone	01248 682133
Fax	01248 682146
Mobile	
Work Email	robin.owen2@wales.nhs.uk

A64. Details of research sponsor(s)

A64-1. Sponsor

Lead Sponsor

- Status: NHS or HSC care organisation
 Academic
 Pharmaceutical industry
 Medical device industry
 Local Authority
 Other social care provider (including voluntary sector or private organisation)
 Other

Commercial status: Non-Commercial
 Commercial

If Other, please specify:

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Contact person

Name of organisation University of Bangor
 Given name Hefin
 Family name Francis
 Address School of Psychology, Adeilad Brigantia, Penrallt Road
 Town/city Gwynedd
 Post code LL57 2AS
 Country UNITED KINGDOM
 Telephone 01248 388339
 Fax 01248 382599
 E-mail h.francis@bangor.ac.uk

Is the sponsor based outside the UK?

Yes No

Under the Research Governance Framework for Health and Social Care, a sponsor outside the UK must appoint a legal representative established in the UK. Please consult the guidance notes.

A65. Has external funding for the research been secured?

- Funding secured from one or more funders
 External funding application to one or more funders in progress
 No application for external funding will be made

What type of research project is this?

- Standalone project
 Project that is part of a programme grant
 Project that is part of a Centre grant
 Project that is part of a fellowship/ personal award/ research training award
 Other

Other – please state:

Research project will form part of the researchers thesis for her Doctorate in Clinical Psychology

A67. Has this or a similar application been previously rejected by a Research Ethics Committee in the UK or another country?

Yes No

Please provide a copy of the unfavourable opinion letter(s). You should explain in your answer to question A6-2 how the reasons for the unfavourable opinion have been addressed in this application.

A68-1. Give details of the lead NHS R&D contact for this research:

Title Forename/Initials Surname
 Dr Rossela Roberts
 Organisation Betsi Cadwaladr University Health Board

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Address Ysbyty Gwynedd
Penrhosgarnedd
Bangor, Gwynedd

Post Code LL57 2PW

Work Email rossela.roberts@wales.nhs.uk

Telephone 01248384877

Fax

Mobile

Details can be obtained from the NHS R&D Forum website: <http://www.rdforum.nhs.uk>

A69-1. How long do you expect the study to last in the UK?

Planned start date: 03/02/2014

Planned end date: 01/06/2015

Total duration:

Years: 1 Months: 3 Days: 27

A71-2. Where will the research take place? (Tick as appropriate)

- England
- Scotland
- Wales
- Northern Ireland
- Other countries in European Economic Area

Total UK sites in study 4

Does this trial involve countries outside the EU?

Yes No

A72. What host organisations (NHS or other) in the UK will be responsible for the research sites? Please indicate the type of organisation by ticking the box and give approximate numbers of planned research sites:

- NHS organisations in England
- NHS organisations in Wales 3
- NHS organisations in Scotland
- HSC organisations in Northern Ireland
- GP practices in England
- GP practices in Wales
- GP practices in Scotland
- GP practices in Northern Ireland
- Social care organisations
- Phase 1 trial units
- Prison establishments
- Probation areas
- Independent hospitals 1
- Educational establishments
- Independent research units
- Other (give details)

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Total UK sites in study: 4

A76. Insurance/ indemnity to meet potential legal liabilities*Note: in this question to NHS indemnity schemes include equivalent schemes provided by Health and Social Care (HSC) in Northern Ireland***A76-1. What arrangements will be made for insurance and/or indemnity to meet the potential legal liability of the sponsor(s) for harm to participants arising from the management of the research? Please tick box(es) as applicable.***Note: Where a NHS organisation has agreed to act as sponsor or co-sponsor, indemnity is provided through NHS schemes. Indicate if this applies (there is no need to provide documentary evidence). For all other sponsors, please describe the arrangements and provide evidence.*

- NHS indemnity scheme will apply (NHS sponsors only)
- Other insurance or indemnity arrangements will apply (give details below)

My sponsor, Bangor University, is responsible for insurance and/or indemnity (please see attached for Indemnity Insurance Certificate).

*Please enclose a copy of relevant documents.***A76-2. What arrangements will be made for insurance and/ or indemnity to meet the potential legal liability of the sponsor(s) or employer(s) for harm to participants arising from the design of the research? Please tick box(es) as applicable.***Note: Where researchers with substantive NHS employment contracts have designed the research, indemnity is provided through NHS schemes. Indicate if this applies (there is no need to provide documentary evidence). For other protocol authors (e.g. company employees, university members), please describe the arrangements and provide evidence.*

- NHS indemnity scheme will apply (protocol authors with NHS contracts only)
- Other insurance or indemnity arrangements will apply (give details below)

My sponsor, Bangor University, is responsible for insurance and/or indemnity (please see attached for Indemnity Insurance Certificate).

*Please enclose a copy of relevant documents.***A76-3. What arrangements will be made for insurance and/ or indemnity to meet the potential legal liability of investigators/collaborators arising from harm to participants in the conduct of the research?***Note: Where the participants are NHS patients, indemnity is provided through the NHS schemes or through professional indemnity. Indicate if this applies to the whole study (there is no need to provide documentary evidence). Where non-NHS sites are to be included in the research, including private practices, please describe the arrangements which will be made at these sites and provide evidence.*

- NHS indemnity scheme or professional indemnity will apply (participants recruited at NHS sites only)
- Research includes non-NHS sites (give details of insurance/ indemnity arrangements for these sites below)

My sponsor, Bangor University, is responsible for insurance and/or indemnity (please see attached for Indemnity Insurance Certificate).

Please enclose a copy of relevant documents.

PART C: Overview of research sites

Please enter details of the host organisations (Local Authority, NHS or other) in the UK that will be responsible for the research sites. For NHS sites, the host organisation is the Trust or Health Board. Where the research site is a primary care site, e.g. GP practice, please insert the host organisation (PCT or Health Board) in the Institution row and insert the research site (e.g. GP practice) in the Department row.

Research site		Investigator/ Collaborator/ Contact	
Institution name	Betsi Cadwaladr University Health Board	Title	Dr
Department name	Ty Llywelyn Medium Secure Unit	First name/ Initials	Katie Ann
Street address	Ysbyty Bryn y Neuadd	Surname	Elliott
Town/city	Llanfairfechan Conwy		
Post Code	LL33 OHH		
Institution name	Abertawe Bro Morgannwg University Health Board	Title	Dr
Department name	Caswell Clinic	First name/ Initials	Ruth
Street address	Glanrhyd Hospital Pen Y Fai, Pen-y-fai,	Surname	Bagshaw
Town/city	Bridgend, Mid Glamorgan		
Post Code	CF31 4LN		
Institution name	Partnerships in Care	Title	Dr
Department name	Llanarth Court Hospital	First name/ Initials	Gemma
Street address	Llanarth Raglan	Surname	O'Brien
Town/city	Abergavenny		
Post Code	NP15 2YD		
Institution name	Hywel Dda University Health Board	Title	Dr
Department name	Cwm Seren	First name/ Initials	Hugh
Street address	St David's Park	Surname	Dafforn
Town/city	Carmarthen		
Post Code	SA31 3BB		

PART D: Declarations**D1. Declaration by Chief Investigator**

1. The information in this form is accurate to the best of my knowledge and belief and I take full responsibility for it.
2. I undertake to abide by the ethical principles underlying the Declaration of Helsinki and good practice guidelines on the proper conduct of research.
3. If the research is approved I undertake to adhere to the study protocol, the terms of the full application as approved and any conditions set out by review bodies in giving approval.
4. I undertake to notify review bodies of substantial amendments to the protocol or the terms of the approved application, and to seek a favourable opinion from the main REC before implementing the amendment.
5. I undertake to submit annual progress reports setting out the progress of the research, as required by review bodies.
6. I am aware of my responsibility to be up to date and comply with the requirements of the law and relevant guidelines relating to security and confidentiality of patient or other personal data, including the need to register when necessary with the appropriate Data Protection Officer. I understand that I am not permitted to disclose identifiable data to third parties unless the disclosure has the consent of the data subject or, in the case of patient data in England and Wales, the disclosure is covered by the terms of an approval under Section 251 of the NHS Act 2006.
7. I understand that research records/data may be subject to inspection by review bodies for audit purposes if required.
8. I understand that any personal data in this application will be held by review bodies and their operational managers and that this will be managed according to the principles established in the Data Protection Act 1998.
9. I understand that the information contained in this application, any supporting documentation and all correspondence with review bodies or their operational managers relating to the application:
 - Will be held by the REC (where applicable) until at least 3 years after the end of the study; and by NHS R&D offices (where the research requires NHS management permission) in accordance with the NHS Code of Practice on Records Management.
 - May be disclosed to the operational managers of review bodies, or the appointing authority for the REC (where applicable), in order to check that the application has been processed correctly or to investigate any complaint.
 - May be seen by auditors appointed to undertake accreditation of RECs (where applicable).
 - Will be subject to the provisions of the Freedom of Information Acts and may be disclosed in response to requests made under the Acts except where statutory exemptions apply.
 - May be sent by email to REC members.
10. I understand that information relating to this research, including the contact details on this application, may be held on national research information systems, and that this will be managed according to the principles established in the Data Protection Act 1998.
11. Where the research is reviewed by a REC within the UK Health Departments Research Ethics Service, I understand that the summary of this study will be published on the website of the National Research Ethics Service (NRES), together with the contact point for enquiries named below. Publication will take place no earlier than 3 months after issue of the ethics committee's final opinion or the withdrawal of the application.

Contact point for publication*(Not applicable for R&D Forms)*

NRES would like to include a contact point with the published summary of the study for those wishing to seek further information. We would be grateful if you would indicate one of the contact points below.

- Chief Investigator
 Sponsor

NHS REC Form

Reference:
14/WA/1034

IRAS Version 3.5

- Study co-ordinator
 Student
 Other – please give details
 None

Access to application for training purposes *(Not applicable for R&D Forms)**Optional – please tick as appropriate:*

I would be content for members of other RECs to have access to the information in the application in confidence for training purposes. All personal identifiers and references to sponsors, funders and research units would be removed.

This section was signed electronically by Miss Sarah Angela Kriakous on 30/05/2014 09:35.

Job Title/Post: Trainee Clinical Psychologist
Organisation: Betsi Cadwaladr University Health Board
Email: psp0cd@bangor.ac.uk
Signature:
Print Name: Sarah Angela Kriakous
Date: (dd/mm/yyyy)

D2. Declaration by the sponsor's representative

If there is more than one sponsor, this declaration should be signed on behalf of the co-sponsors by a representative of the lead sponsor named at A64-1.

I confirm that:

1. This research proposal has been discussed with the Chief Investigator and agreement in principle to sponsor the research is in place.
2. An appropriate process of scientific critique has demonstrated that this research proposal is worthwhile and of high scientific quality.
3. Any necessary indemnity or insurance arrangements, as described in question A76, will be in place before this research starts. Insurance or indemnity policies will be renewed for the duration of the study where necessary.
4. Arrangements will be in place before the study starts for the research team to access resources and support to deliver the research as proposed.
5. Arrangements to allocate responsibilities for the management, monitoring and reporting of the research will be in place before the research starts.
6. The duties of sponsors set out in the Research Governance Framework for Health and Social Care will be undertaken in relation to this research.
7. Where the research is reviewed by a REC within the UK Health Departments Research Ethics Service, I understand that the summary of this study will be published on the website of the National Research Ethics Service (NRES), together with the contact point for enquiries named in this application. Publication will take place no earlier than 3 months after issue of the ethics committee's final opinion or the withdrawal of the application.

This section was signed electronically by Mr Hefin Francis on 02/06/2014 09:48.

Job Title/Post: School Manager for Psychology
Organisation: Bangor University
Email: h.francis@bangor.ac.uk

D3. Declaration for student projects by academic supervisor(s)

1. I have read and approved both the research proposal and this application. I am satisfied that the scientific content of the research is satisfactory for an educational qualification at this level.
2. I undertake to fulfil the responsibilities of the supervisor for this study as set out in the Research Governance Framework for Health and Social Care.
3. I take responsibility for ensuring that this study is conducted in accordance with the ethical principles underlying the Declaration of Helsinki and good practice guidelines on the proper conduct of research, in conjunction with clinical supervisors as appropriate.
4. I take responsibility for ensuring that the applicant is up to date and complies with the requirements of the law and relevant guidelines relating to security and confidentiality of patient and other personal data, in conjunction with clinical supervisors as appropriate.

Academic supervisor 1

This section was signed electronically by Dr Robin Owen on 30/05/2014 12:22.

Job Title/Post: Clinical Psychologist
Organisation: NHS (BCUHB)
Email: robin.owen2@wales.nhs.uk

Academic supervisor 2

This section was signed electronically by DR KATIE ANN ELLIOTT on 30/05/2014 13:34.

Job Title/Post: consultant clinical psychologist
Organisation: BCUHB
Email: katieannelliott@hotmail.com

Appendix A
Research Protocol

Large Scale Research Project

Research Proposal

1. Project Title and Setting

The title of the project is ‘The role of mindfulness and coping on burnout and occupational stress amongst healthcare professionals employed within forensic inpatient settings.’ The research will apply to forensic mental health professionals that work within a low and/or medium secure inpatient setting (see Section 6). Patients detained at these hospitals will have been assessed as mentally disordered, have committed offences within the criminal justice system and they also require conditions of enhanced security.

2. Supervision

Dr. Katie Ann Elliott, Consultant Clinical Psychologist at Ty Llywelyn Medium Secure Unit, will be providing supervision for the project. Additional supervision may be required from Programme team staff relating to the data and statistical analysis.

3. Background

Introduction

There is an increasing level of stress and work related burnout amongst healthcare professionals (Goodman & Schorling, 2012) and this can be costly to all those involved (Griffin, Hogan, & Lambert, 2012). A large amount of research has investigated occupational stress among healthcare professionals, however, less research has investigated occupational stress and burnout in healthcare professionals that are employed within forensic mental health services such as secure hospitals (Elliott & Daley, 2012).

Model of Burnout

In relation to a model of burnout, Maslach, Jackson, and Leiter (1996) highlighted that burnout is characterized by three key features, emotional exhaustion, depersonalization and reduced personal accomplishment. Burnout is likely to occur in professionals that work directly with others. Emotional exhaustion refers to individuals feeling emotionally drained

and consequently feeling they cannot fully interact with others within a professional capacity. Depersonalization involves individuals developing negative attitudes relating to other staff members and clients. Maslach et al. (1996) highlighted that emotional exhaustion and depersonalization are highly correlated and that depersonalization can be viewed as a response to emotional exhaustion and consequently professionals may treat clients in an impersonal manner. Reduced personal accomplishment refers to individuals perceiving their level of competence and success at work negatively.

Level of Burnout in Forensic Mental Health Settings

Working within a forensic mental health setting involves professionals being exposed to emotionally demanding situations with both staff and service users, this, in turn can increase the risk of staff burnout (Jones, Janman, Payne, & Rick, 1987; Rajan et al., 2007). A number of research studies to date have found that working within a forensic mental health setting is associated with increased occupational stress and burnout (Buunk, Ybema, Gibbons & Ipenburg, 2001; Chadler & Nolan, 2000; Dennis & Leach, 2007; Elliott & Daley, 2012; Jones et al., 1987; Kirby & Pollack, 1995; Oddie & Ousley, 2007; Rajan et al., 2007; Shelby, Stoddart & Taylor., 2001; Thorpe, Righthand & Kubick, 2001; van der Ploeg, Dorresteyn & Kleber, 2003; van Dierendonck, Schaufeli & Buunk, 1996). However, many of these studies have limitations with regards to small sample sizes, relying on single assessment measures and obtaining limited demographic data. In addition, the majority of the studies explored occupational stress and burnout in nurses working within forensic mental health services, therefore, more research is required focusing on different professional groups.

The Relationship between Burnout, Occupational Stress, Coping & Mindfulness in Forensic Mental Healthcare Professionals (FMHCP)

Mindfulness

There is a growing body of evidence that suggests that mindfulness is associated with reduced stress and increased psychological well-being, this, therefore provides support for the use of mindfulness training with individuals that experience stress (Branstrom, Duncan & Moskowitz, 2011). There are a number of studies that have investigated the effectiveness of mindfulness interventions on occupational stress and burnout in different professional groups,

including healthcare professionals (see Section 17). Mindfulness interventions, namely Mindfulness Based Stress Reduction (MBSR) have been found to reduce occupational stress and burnout (Brady, O'Conner, Burgermeister & Hanson, 2012; Goodman & Schorling, 2012). However, there have been no studies to date that have explored the nature of the relationship between mindfulness, burnout and occupational stress among FMHCPs.

Coping

A large amount of research has been conducted into coping and stress, however, there is near to no research that has investigated the nature of the relationship between coping, burnout and occupational stress in FMHCPs. Elliott & Daley (2012) found that FMHCPs used a variety of coping strategies, including healthy and unhealthy strategies; however, higher levels of burnout were associated with unhealthy coping strategies. Interestingly, Gould, Watson, Price and Valliant (2013) reported that prison officers working with young offenders used adaptive coping strategies but still reported high levels of burnout. This suggests that there are other factors, such as gender and length of experience that could influence level of burnout. Similarly, Hellin (1999) found that the longer staff had worked at Ashworth High Secure Hospital, the greater their level of emotional exhaustion. Gender of the client group that FMHCP work with may also influence level of burnout. Rajan et al (2007) found that nurses working on a women's ward in a medium secure hospital experienced a significantly greater increase in emotional exhaustion compared to those nurses working on the male ward. A number of demographic and health related factors, including staff length of experience and gender, will be examined in relation to how they influence burnout in the present study.

The Relationship between Coping, Mindfulness and Perceived Stress in Forensic Mental Healthcare Professionals (FMHCP)

A limited number of studies have investigated the relationship between mindfulness and coping styles, and no studies to date have investigated the relationship between coping, mindfulness and perceived stress in forensic mental healthcare professionals. Palmer and Rodger (2009) found that mindfulness was positively associated with rational coping (helpful coping) and was negatively associated with emotional and avoidant coping (unhelpful coping) and perceived stress. This perhaps suggests that individuals who use mindfulness skills are more likely to employ helpful coping strategies, whereas individuals who do not use

mindfulness are more likely to use unhelpful coping strategies and report elevated levels of stress.

Summary of Present Study

There is a lack of research looking into burnout and occupational stress among FMHCPs. Working in forensic services can be stressful and dangerous; this in turn can lead to high staff turnover and increased absenteeism. The present study will therefore build on existing research by exploring burnout and occupational stress in FMHCPs employed within secure settings in Wales. Existing studies that have looked at occupational stress within forensic services have mostly focused on nurses working within forensic mental health services; therefore, the present study will be looking at nurses and other disciplines that work within these settings.

Mindfulness could be a possible intervention for FMHCPs to help reduce staff burnout and stress and increase psychological well-being. This, in turn, could reduce staff sickness and staffing turnover. Some studies have looked at the effectiveness of mindfulness interventions with healthcare professionals; however, no studies have looked at the relationship between mindfulness, coping, burnout and occupational stress among FMHCPs. The primary aim of the study will be to investigate whether increased mindfulness is associated with decreased stress and burnout and amongst FMHCP. A secondary aim of the study will be to investigate whether adaptive coping is associated with decreased stress and burnout among FMHCPs. A third aim of the study will be to explore the nature of the relationship between mindfulness and coping styles and whether these two factors influence perceived stress in FMHCPs.

4. Hypotheses and Research Question

The following predictions have been made for the present study:

- a) Healthcare professionals employed in an inpatient forensic setting will report elevated levels of burnout and occupational stress compared with mean or norm scores for other groups of healthcare professionals.
- b) Healthcare professionals employed in an inpatient forensic setting that report reduced levels of mindfulness will also report increased levels of burnout and occupational stress.

- c) Healthcare professionals employed in an inpatient forensic setting that report increased use of maladaptive coping strategies will also report increased levels of burnout and occupational stress.
- d) Healthcare professionals employed in an inpatient forensic setting that report increased use of adaptive coping strategies will also report increased use of mindfulness and reduced levels of perceived stress.

5. Overlap with Previous Assignments

The MAP focused on the efficacy of parenting interventions for child and adolescent conduct problems. The SRRP involves analysing the data of a client satisfaction survey that was completed with service users at Ty Llywelyn Medium Secure Unit. The presentation looked at the effectiveness of mindfulness interventions for depression in older adults. The processes and mechanisms essay focused on the role of implicit memory in post-traumatic stress disorder (PTSD).

6. Participant Recruitment

Potential participants will be FMHCPs that are employed within five different secure hospitals in Wales that all provide a forensic service. Professionals will include individuals from different disciplines including nursing, occupational therapy, psychiatry, psychology, social workers, ward based support staff and any other therapists. The five units are as follows:

- a) *The Casewell Clinic*: A 50 bedded medium secure unit, however, it will have 64 beds once it is fully commissioned. This hospital is within the Abertawe Bro Morgannwg University Health Board area. There are a total of 195 staff at this hospital.
- b) *Llanarth Court*: A 114 bedded unit. 49 beds are within the low secure facility and 61 are within the medium secure facility. The remaining 4 beds are part of the community rehabilitation service but staff working solely in this service will be excluded from the study, as it is not an inpatient service. It is run by a private company Partnerships in Care (PIC). There are a total of 229 staff at this hospital.

- c) *Ty Llywelyn Medium Secure Unit (MSU)*: A 25 bedded medium secure unit. This hospital is within the Betsi Cadwaladr University Health Board area. There are a total of 100 staff at this hospital.
- d) *Cwm Seren*: An 18 bedded low secure unit. This hospital is within the Hywel Da University Health Board area. There are a total of 70 staff at this hospital.
- e) *Whitchurch Hospital*: A 25 bedded low secure unit. The hospital is within the Cardiff and Vale University Health Board area. There are a total of 56 staff at this hospital.

All hospitals have confirmed their participation in the research project, therefore, there is a total of 650 participants for the research study. Local R&D approval has been obtained for Betsi Cadwaladr University Health Board and Hywel Da University Health Board. Local R&D approval has been submitted to Abertawe Bro Morgannwg University Health Board and the trainee is still awaiting a response. The trainee is currently collating all the relevant documentation for submission for local R&D for Cardiff and Vale University Health Board.

7. Proposed Design and Procedures

Design

Postal research packs will be distributed to FMHCPs that work within six low and medium secure hospitals in Wales. A questionnaire design will be employed as the postal research packs will include a Background Information Questionnaire and four different self-report questionnaires, (see section 8). Questionnaires are relatively easy to administer and score and they also directly assess the participants' views about a topic area. However, questionnaires also have limitations related to social desirability response bias.

Procedures

It is anticipated that the research contact in each hospital will distribute the research packs to all staff that work in their unit. The research packs will include a Participant Information Sheet which includes information about the nature of the study, the voluntary nature of taking part, confidentiality, the wish to withdraw from the study and relevant contact numbers that

participants could use for emotional support. The completed research packs will be then returned in a pre-paid envelope to the North Wales Clinical Psychology Programme. Research contacts in each hospital will also be provided with a reminder letter by the Trainee Clinical Psychologist to distribute to all staff one month after the initial distribution of the research packs.

8. Measures

A Background Information Questionnaire will be included in the postal research packs. The questionnaire will ask participants about a number of demographic and health related factors. These include age, gender, marital status, children, ethnic origin, smoking, alcohol, caffeine, drug use, life events, occupation, length of experience in inpatient services, sick leave, type of unit they work on and gender of patients they have most contact with. Participants will also be asked about the amount of supervision they receive.

Four self-report questionnaires will be included in the postal research packs. They are as follows:

The Maslach Burnout Inventory (MBI) – Human Services Survey (Maslach et al., 1996)

A 22 item questionnaire that assesses three core dimensions of burnout including emotional exhaustion (EE), depersonalization (DP) and reduced (PA) personal accomplishment (refer to section 3). Burnout is present with high scores on the EE and DP scales and low scores on the PA scale. Reliability coefficients for the subscales were as follows: .90 for EE, .79 for DP and .71 for PA. The test-retest reliability for the subscales was as follows: .82 for EE, .60 for DP and .80 for PA (Maslach et al, 1996). Elliott & Daley (2012) reported a Cronbach's coefficient alpha of .78 for the MBI with FHCP.

The Staff Stressor Questionnaire (SSQ) (Hatton et al., 1999)

A 33 item questionnaire that assesses work stressors among health care professionals. The SSQ has seven subscales: client's challenging behaviour, client's poor skills, lack of staff support, lack of resources, low job status, bureaucracy and work-home conflicts. Higher

scores on the SSQ suggest higher levels of perceived stress. Hatton et al (1999) found that all subscales had adequate internal reliability. Elliott & Daley (2012) reported a Cronbach's coefficient alpha of .82 for the SSQ with FHCP.

The Brief Cope Inventory (BCI) (Carver, 1997)

A 28 item questionnaire that assesses a broad range of coping strategies. The BCI originally has 14 subscales; however, Hastings & Brown (2002) found good levels of reliability for two dimensions of staff adaptive and maladaptive coping with teachers and support staff working in special schools for children with mental retardation. The adaptive coping subscale was made up of 16 items (adaptive coping, planning, positive reframing, acceptance, humour, religion, using emotional support and using instrumental support) and Cronach's alpha was 0.83. The maladaptive coping subscale was made up of 12 items (self-distraction, denial, venting of emotions, substance use, behavioural disengagement and self-blame) and Cronbach's alpha was 0.75. These two dimensions will be used in the present study.

The Five Facet Mindfulness Questionnaire-Short Form (FFMQ-SF) (Bohlmeijer, ten Klooster, Fledderus, Veehof & Baer, 2011)

A 24 item questionnaire designed to measure mindfulness. The FFMQ-SF includes five subscales and they have all demonstrated adequate internal consistency: observing (.78), describing (.91), acting with awareness (.86), non-judging of inner experience (.86) and non-reactivity to inner experience (.73). The FFMQ-SF was developed and assessed in a sample of adults with clinically relevant symptoms of depression and anxiety. It was then cross validated in an independent sample of patients with fibromyalgia (Bohlmeijer et al., 2011). Higher scores indicate more mindfulness.

9. Data Management & Analysis

Due to using a postal research pack design, it is anticipated that a 30% response rate will be achieved. Elliott & Daley (2012) obtained a 32% response rate, from a total of 422 packs that were distributed to FHCPs, 135 were returned. For the present study it is anticipated that 400 questionnaires will need to be distributed in order for 80-100 questionnaires to be returned.

The Background Information Questionnaire and the rest of the four questionnaires all produce quantitative data. Quantitative data will be analysed using SPSS, a statistical package typically used in Social Sciences. The primary aim of the study will be to investigate whether increased mindfulness and adaptive coping is associated with decreased stress and burnout amongst FMHCs. A regression model will be used to investigate this with the dependant variable being burnout or stress. A secondary aim of the study will be to explore the nature of the relationship between mindfulness, coping and perceived stress; therefore, correlations between these factors will be completed. However, a regression model with stress as the dependant variable may also be completed to establish whether FMHCs that report increased use of adaptive coping strategies will also report increased use of mindfulness and reduced levels of perceived stress.

10. Diversity

The participant information sheets, instruction sheets and contact sheets will be translated into Welsh via the university translation department. This is a pertinent issue relating to this study as it is anticipated participants will be recruited from areas of Wales where the medium of Welsh is very prominent.

11. Proposed Journals

Proposed journals for the review and research paper include the Journal of Forensic Practice, Journal of Forensic Psychiatry and Psychology, Legal and Criminological Psychology and Mindfulness.

12. Ethical/Registration Issues

The study will require NHS research permission. In line with changes made to the remit of the Research Ethics Committee (REC) by the Governance Arrangements for Research Ethics Committee (GAfREC) in September 2011, research involving staff does not require an REC review. The study will also require research permission from the private company Partnerships in Care.

13. Feedback

Results from the research will be disseminated in a number of ways. The preferred format for the feedback of the research findings will be discussed with the research contact at each hospital, however, it is anticipated that a report will be completed that summarises the main findings from the study. The report will then be distributed to the research contacts in each hospital so that the findings can be fed back to Operational Managers, Heads of Departments, multi-disciplinary team members and the employees that took part in the research. A 15 minute PowerPoint presentation on the empirical study will also be presented at the North Wales Clinical Psychology Programme's annual conference. If necessary a confidential report will also be completed for relevant Heads of Department regarding any comments made by staff members.

14. Risk Assessment

The research may find that professionals from particular hospitals or professional groups have elevated levels of burnout and/or occupational stress; this cannot be addressed in the empirical study but will be fed back to relevant research contacts or Heads of Departments. Relevant contact numbers for participants will again be provided. Participants may also disclose work related issues that are causing them ongoing stress or may perhaps be breaching hospital or company policies; again this information will need to be treated with caution and fed back to the relevant people.

15. Data Storage

During the project all data will be stored in locked cabinets at Ty Llywelyn MSU. All raw data will be shredded upon completion of the data analysis and report writing.

16. Financial Information

Please see LSRP Proposal Expenses Form.

17. Literature Review

The literature review will involve looking at the effectiveness of mindfulness based interventions with healthcare professionals and then more specifically within forensic settings. Issues relating to implementation of the mindfulness based interventions within forensic settings will also be discussed.

18. Timetable

Table 1. Timetable of projection completion.

Date	Task	Name of individual that is responsible for the task
16 th July 2013	LSRP Proposal Submission	Sarah Kriakous
November 2013 – January 2014	School of Psychology Research Ethics Application	Sarah Kriakous
February - March 2014	Approach hospitals regarding participant recruitment	Sarah Kriakous & Dr. Katie Ann Elliott
April - May 2014	Research Ethics Application	Sarah Kriakous
June– September 2014	Introduction and Method of empirical study	Sarah Kriakous
June – September 2014	Data Collection	Sarah Kriakous
July 2014	LSRP Progress Report 1	Sarah Kriakous
October– December 2014	Data Analysis and Results and Discussion sections of the empirical paper	Sarah Kriakous
November 2014	LSRP Proposal Report 2	Sarah Kriakous
January – March 2015	Literature Review	Sarah Kriakous
March – April 2015	Discussion Paper and Thesis Abstract	Sarah Kriakous

1 st May 2015	Draft version of LSRP to TC and supervisor	Sarah Kriakous
June 2015	LSRP Submission	Sarah Kriakous
June 2015	VIVA	Sarah Kriakous
August 2015	Draft LSRP Presentation	Sarah Kriakous
September 2015	LSRP Presentation at the North Wales Clinical Psychology Annual Conference	Sarah Kriakous

19. References

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Appendix B

Participant Information Sheet

(English and Welsh Versions)

COLEG IECHYD A GWYDDORAU YMDDYGIAD
COLLEGE OF HEALTH & BEHAVIOURAL SCIENCES
YSGOL SEICOLEG
SCHOOL OF PSYCHOLOGY



RHAGLEN SEICOLEG CLINIGOL GOGLEDD CYMRU
NORTH WALES CLINICAL PSYCHOLOGY PROGRAMME

Participant Information Sheet

1. Study title

The role of mindfulness and coping on burnout and occupational stress amongst health care professionals employed within forensic inpatient settings

2. Invitation to participate

You are being invited to take part in a research study. Not much is known about the way staff members feel about their work and the services they work within, however, staff members are fundamental to running a service. Therefore, I would be interested in finding out about your views relating to your work and the service you work within. Before you decide whether to take part in the research, or not, it is important to read this participant information sheet as it provides you with all the information you need to make an informed decision.

3. What is the purpose of the study?

Working in forensic services can be emotionally challenging and stressful; therefore, staff members require a high level of coping and emotional resilience. Existing studies have looked at occupational stress within forensic services; however, many have focused solely on nurses working within community settings. The present study will, therefore, build on existing research by exploring the relationship between coping and occupational stress in a number of staff disciplines whom are employed within forensic inpatient services in Wales.

Mindfulness involves intentionally focusing one's attention on the experience occurring at the present moment in a non-judgmental or accepting way. Mindfulness has been found to be associated with helpful ways of coping and reduced levels of stress. Despite the growing body of literature investigating the effectiveness of mindfulness based interventions with health care professionals, there is next to no research focusing on the relationship between coping, mindfulness, burnout and occupational stress in health care professionals employed within forensic inpatient settings. This research project, therefore, aims to build on existing research by investigating whether mindfulness could be a possible intervention to help improve staff coping and resilience.

4. Who is organising and funding the research?

The study will form part of the final research project of Miss Sarah Angela Kriakous who is working towards a Doctorate in Clinical Psychology with the North Wales Clinical Psychology Programme (NWCPP) at the University of Bangor, Wales. The study is being

supervised by Dr. Katie Ann Elliott (Consultant Clinical Psychologist) at the North Wales Forensic Psychiatric Service, Ty Llywelyn Medium Secure Unit, Bryn Y Neuadd Hospital, Llanfairfechan, Conwy, LL33 OHH.

5. Why have I been chosen?

You have been invited to take part in the study because you work within a forensic inpatient setting. All health care professionals employed within your service have been invited to participate. Staff teams from numerous other forensic inpatient services in Wales have also been invited to participate in the study.

6. Do I have to take part?

Participation in the study is not requested by your employer, therefore, it is completely your decision regarding whether you take part in the research, or not. If you decide to take part and later wish to withdraw from the study, you do not need to provide a reason.

7. What will happen if I do take part?

If you agree to take part, please read the Instruction Sheet carefully, complete the questionnaire booklet and return all the completed forms to me in the S.A.E provided. This will take 30 to 45 minutes of your time to complete. You are encouraged to answer all questions included in the questionnaires, however, if you do not wish to answer a question you may leave it blank. The Participant Information Sheet and the individual Code Number Card is for you to keep for your reference.

If your preferred language is Welsh, I would like to apologise that the questionnaires are solely in English. The questionnaires could not be translated into Welsh due to potential problems in losing critical aspects of their meaning.

8. Will the information I provide for the study remain confidential?

All information that you provide is kept confidential as all responses are anonymous. You are not asked to provide your name, therefore, every research pack is provided with an anonymous Code Number Card. Your code number has been entered onto the front page of the questionnaire booklet; this will allow the researcher to remove your data from the study if necessary. Your organisation will not have access to the questionnaires at any time. The data you provide will be subject to statistical analysis, therefore, individuals will not be identified in any reports.

9. What are the risks in taking part?

Some staff may become upset as a consequence of thinking about some of the stressors they experience at work. This has a limited likelihood of occurring; however, if you find yourself in this unlikely position there are contact numbers for support services provided by your employer in the Contacts Sheet. If for any reason you are concerned about your personal well-being, it is recommended that you seek appropriate professional advice.

10. What are the benefits of taking part?

We hope the information gathered in this study will help design interventions that can help improve staff coping and reduce staff burnout. It is hoped that the information you provide will help increase awareness of staff well-being and improve staff support in the service you work within.

11. What will happen to the results of the research study?

The results of the research study will be made available to you after November 2015 and all staff will be sent a copy of the summary results by their service manager. It is hoped that the study will be published in a peer reviewed research journal.

12. What if I have a complaint?

If you have any concerns or wish to complain regarding how the research has been completed, your organisations normal complaints procedures are available to you. If we cannot resolve any complaints that you may have, then you may address your concerns to:

Mr. Hefin Francis
School Manager
School of Psychology
Bangor University
Gwynedd LL57 2AS

13. Contacts for further information

If you have any questions, or would like more information about the study then please do not hesitate to contact either myself or my supervisor at the following:

Miss Sarah Angela Kriakous
Trainee Clinical Psychologist
North Wales Clinical Psychology Programme
School of Psychology
College Road
Bangor
Gwynedd, LL57 2DG
Email: Sarah.Kriakous@wales.nhs.uk

Dr. Katie Ann Elliott
Consultant Clinical Psychologist
North Wales Forensic Psychiatric
Service
Ty Llywelyn Medium Secure Unit
Bryn Y Neuadd Hospital
Llanfairfechan, Conwy, LL33 OHH
Email: Katie.Elliott@wales.nhs.uk

I would like to thank you for reading this information sheet and for considering participating in the research study.

Best wishes
Sarah Angela Kriakous
Trainee Clinical Psychologist

COLEG IECHYD A GWYDDORAU YMDDYGIAD
COLLEGE OF HEALTH & BEHAVIOURAL SCIENCES
YSGOL SEICOLEG
SCHOOL OF PSYCHOLOGY



RHAGLEN SEICOLEG CLINIGOL GOGLEDD CYMRU
NORTH WALES CLINICAL PSYCHOLOGY PROGRAMME

Taflen wybodaeth i rai sy'n cymryd rhan

1. Teitl yr Astudiaeth

Swyddogaeth ymwybyddiaeth ofalgar ac ymdopi gyda chwythu plwc a straen galwedigaethol ymysg gweithwyr gofal iechyd proffesiynol a gyflogir mewn lleoliadau ffforensig i gleifion preswyl

2. Gwahoddiad i gymryd rhan

Rydych yn cael gwahoddiad i gymryd rhan mewn astudiaeth ymchwil. Nid oes llawer yn wybyddus am y ffordd mae aelodau staff yn ei deimlo ynghylch eu gwaith a'r gwasanaethau y maent yn gweithio ynddynt. Fodd bynnag, mae aelodau staff yn allweddol bwysig i redeg gwasanaeth. Felly, mae gennyf ddiddordeb gwybod beth yw eich barn yn ymwneud â'ch gwaith a'r gwasanaeth rydych yn gweithio ynddo. Cyn i chi benderfynu a ydych am gymryd rhan yn yr ymchwil ai peidio, mae'n bwysig eich bod yn darllen y daflen wybodaeth hon gan ei bod yn rhoi'r holl wybodaeth rydych ei hangen i wneud penderfyniad gwybodus.

3. Beth yw diben yr astudiaeth?

Gall gweithio mewn gwasanaethau ffforensig fod yn heriol yn emosiynol gyda chryn dipyn o straen; felly, mae aelodau staff angen llawer o allu i ymdopi a gwytnwch emosiynol. Mae rhai astudiaethau blaenorol wedi edrych ar straen galwedigaethol yn y gwasanaethau ffforensig; fodd bynnag, mae llawer wedi canolbwyntio'n unig ar nyrsys sy'n gweithio mewn lleoliadau cymunedol. Bydd yr astudiaeth bresennol, felly, yn adeiladu ar ymchwil bresennol drwy edrych ar y berthynas rhwng ymdopi a straen galwedigaethol mewn nifer o ddisgyblaethau staff sy'n gyflogedig mewn gwasanaethau ffforensig i gleifion preswyl yng Nghymru.

Mae ymwybyddiaeth ofalgar yn ymwneud â chanolbwyntio eich sylw ar brofiad y foment bresennol mewn ffordd anfeirniadol. Gwelwyd bod ymwybyddiaeth ofalgar o gymorth i ymdopi â phwysau gwaith gan arwain at lai o straen. Er gwaethaf y corff cynyddol o lenyddiaeth sy'n ymchwilio i effeithiolrwydd ymyriadau seiliedig ar ymwybyddiaeth ofalgar gyda gweithwyr proffesiynol gofal iechyd, nid oes fawr ddim ymchwil sy'n canolbwyntio ar y berthynas rhwng ymdopi, ymwybyddiaeth ofalgar, chwythu plwc a straen galwedigaethol ymysg gweithwyr proffesiynol gofal iechyd sy'n gyflogedig mewn lleoliadau ffforensig i gleifion preswyl. Nod y project ymchwil hwn, felly, yw adeiladu ar ymchwil bresennol drwy ymchwilio i weld a ellir defnyddio ymwybyddiaeth ofalgar i helpu staff i ymdopi a magu gwytnwch.

4. Pwy sy'n trefnu ac yn ariannu'r ymchwil?

Bydd yr astudiaeth yn rhan o broject ymchwil terfynol Miss Sarah Angela Kriakous sy'n gweithio i gael Doethuriaeth mewn Seicoleg Glinigol gyda Rhaglen Seicoleg Glinigol Gogledd Cymru (NWCPP) ym Mhrifysgol Bangor. Goruchwylir yr astudiaeth gan Dr. Katie Ann Elliott (Seicolegydd Clinigol Ymgynghorol) yng Ngwasanaeth Seiciatrig Fforensig Gogledd Cymru, Uned Ddiogel Tŷ Llywelyn, Ysbyty Bryn Y Neuadd, Llanfairfechan, Conwy, LL33 OHH.

5. Pam rydw i wedi cael fy newis?

Rydych wedi cael gwahoddiad i gymryd rhan yn yr astudiaeth am eich bod yn gweithio mewn lleoliad fforensig i gleifion preswyl. Mae'r holl weithwyr iechyd proffesiynol a gyflogir yn eich gwasanaeth wedi cael gwahoddiad i gymryd rhan. Mae timau staff o nifer o wasanaethau fforensig eraill i gleifion preswyl yng Nghymru hefyd wedi cael gwahoddiad i gymryd rhan yn yr astudiaeth.

6. Oes rhaid i mi gymryd rhan?

Nid yw eich cyflogwr wedi gofyn i chi gymryd rhan yn yr astudiaeth; felly, eich penderfyniad chi'n unig yw a ydych am gymryd rhan yn yr ymchwil ai peidio. Os penderfynwch gymryd rhan a'ch bod wedyn eisiau tynnu'n ôl o'r astudiaeth, nid oes raid i chi roi rheswm.

7. Beth fydd yn digwydd os byddaf yn cymryd rhan?

Os cytunwch i gymryd rhan, darllenwch y Daflen Gyfarwyddiadau'n ofalus, llenwch y llyfryn holiadur a dychwelwch yr holl ffurflenni ataf os gwelwch yn dda yn yr amlen a ddarperir. Bydd yn cymryd 30 i 45 munud i lenwi'r holiaduron. Fe'ch anogir i ateb yr holl gwestiynau sydd yn yr holiaduron; fodd bynnag, os nad ydych eisiau ateb cwestiwn gadewch o'n wag. Mae'r Daflen Wybodaeth i rai'n cymryd rhan a'ch Cerdyn Rhif Cod unigol i chi i'w cadw fel y gellwch gyfeirio atynt eto.

Os mai'r Gymraeg yw eich iaith ddewisol, hoffwn ymddiheuro mai yn Saesneg yn unig y mae'r holiaduron i'w cael. Nid yw'n bosibl cyfieithu'r holiaduron i'r Gymraeg oherwydd problemau posibl yn gysylltiedig â cholli agweddau pwysig ar eu hystyr.

8. Fydd y wybodaeth rydw i'n ei rhoi'n cael ei chadw'n gyfrinachol?

Caiff yr holl wybodaeth a rowch ei chadw'n gyfrinachol gan fod yr holl ymatebion yn ddienw. Ni ofynnir i chi roi eich enw gan fod Cerdyn Rhif Cod dienw ar bob pecyn ymchwil. Mae eich rhif cod wedi ei roi yng nghornel dde uchaf tudalen flaen y llyfryn holiadur, fel y gall yr ymchwilydd dynnu eich data o'r astudiaeth os bydd angen. Ni fydd eich sefydliad yn cael gweld y llyfrynau holiadur ar unrhyw adeg. Caiff y data a roddir gennych eu dadansoddi'n ystadegol; felly, ni chaiff unigolion eu nodi mewn unrhyw adroddiadau.

9. Beth yw risgiau cymryd rhan?

Gall meddwl am y pethau sy'n achosi straen iddynt yn y gwaith gynhyrfu rhai aelodau staff. Nid yw hyn yn debygol o ddigwydd. Fodd bynnag, os gwelwch eich bod yn y sefyllfa

annhebygol hon mae yna rifau cyswllt yn y Daflen Gysylltiadau i'r gwasanaethau cefnogi a ddarperir gan eich cyflogwr. Os ydych yn pryderu am eich lles personol am unrhyw reswm fe'ch anogir i geisio cyngor proffesiynol priodol.

10. Beth yw manteision cymryd rhan?

Rydym yn gobeithio y bydd y wybodaeth a gesglir yn yr astudiaeth hon o gymorth i gynllunio ymyriadau a all helpu i alluogi staff i ymdopi â phwysau gwaith a lleihau achosion o chwythu plwc ymysg staff. Gobeithir y bydd y wybodaeth a roddwch o gymorth i gynyddu ymwybyddiaeth o les ymysg staff a gwella cefnogaeth i staff yn y gwasanaeth rydych yn gweithio ynddo.

11. Beth fydd yn digwydd i ganlyniadau'r astudiaeth ymchwil?

Bydd canlyniadau'r astudiaeth ymchwil ar gael i chi ar ôl mis Tachwedd 2015 a bydd holl staff yn cael copi o grynodedb o'r canlyniadau gan eu rheolwr gwasanaeth. Gobeithir cyhoeddi canlyniadau'r astudiaeth mewn cyfnodolyn ymchwil.

12. Beth os bydd gennyf gwyn?

Os oes gennych unrhyw bryderon, neu os ydych eisiau cwyno ynglŷn â'r ffordd y cynhaliwyd yr astudiaeth hon, gellwch ddefnyddio trefniadau cwyno arferol eich sefydliadau. Os na allwn ni ddatrys unrhyw gwynion fydd gennych, yna gellwch eu cyfeirio at:

Mr Hefin Francis,
Rheolwr yr Ysgol
Ysgol Seicoleg
Prifysgol Bangor
Gwynedd LL57 2AS

13. Cysylltiadau am fwy o wybodaeth:

Os oes gennych unrhyw gwestiynau, neu os hoffech gael gwybodaeth bellach am yr astudiaeth, mae pob croeso i chi gysylltu â mi neu â'm goruchwyliwr fel a ganlyn:

Miss Sarah Angela Kriakous
Seicolegydd Clinigol dan Hyfforddiant
Rhaglen Seicoleg Glinigol Gogledd Cymru
Fford y Coleg
Bangor
Gwynedd
LL57 2DG
E-bost: Sarah.Kriakous@wales.nhs.uk

Dr. Katie Ann Elliott
Seicolegydd Clinigol Ymgynghorol
Gwasanaeth Seiciatreg Fforensig
Gogledd Cymru
Uned Tŷ Llywelyn
Ysbyty Bryn Y Neuadd
Llanfairfechan, Conwy, LL33 OHH
E-bost: Katie.Elliott@wales.nhs.uk

Hoffwn ddiolch i chi am ddarllen y daflen wybodaeth hon ac ystyried cymryd rhan yn yr astudiaeth ymchwil.

Dymuniadau gorau,
Sarah Angela Kriakous
Seicolegydd Clinigol dan Hyfforddiant

Appendix C
Instruction Sheet
(English and Welsh Versions)

Instruction Sheet

1. Participant Information Sheet

Please ensure that you read the Participant Information Sheet carefully and take the time to consider whether you wish to participate in the research project. This information sheet is for you to keep for your records.

2. Participant Code Number Card

Please ensure you retain the Participant Code Number Card for your reference. The code is anonymous and solely known to you. The code number has been placed on the top right hand corner of the front page of the questionnaire booklet, this is so the researcher can remove your data from study if required.

3. Instruction Sheet

Please ensure that you read the Instruction Sheet carefully prior to completing the questionnaires.

4. Questionnaires

Please read each question carefully. There are no right or wrong answers. Try not to think about each question for too long, please provide your immediate response by circling the number or answer that best matches your view. Please ensure that you answer *all* questionnaires and *all* questions as openly and honestly as possible. All the information you provide will be kept strictly confidential and your organisation will not have access to the questionnaire booklets at any time.

5. S.A.E

Once you have completed the questionnaire booklet, please return it in the enclosed pre-paid self-addressed envelope and return it to me within 14 days. The return of your completed questionnaire will be greatly appreciated.

6. Contact Sheets

If you are concerned about your personal well-being after completing the questionnaires, you are encouraged to seek appropriate professional advice. The enclosed Contacts Sheet also provides the numbers for support services provided by your employers.

**Now you have read the Instruction Sheet, please begin the questionnaire
Thank you very much**

Taflen Gyfarwyddiadau

1. Taflen wybodaeth i rai sy'n cymryd rhan

Darllenwch y daflen wybodaeth i rai sy'n cymryd rhan yn ofalus os gwelwch yn dda a chymrwch amser i ystyried a ydych eisiau cymryd rhan yn y project ymchwil ai peidio. Mae'r daflen wybodaeth hon i chi i'w chadw ar gyfer eich cofnodion.

2. Cerdyn Rhif Cod y Cyfranogwr

Gwnewch yn siŵr eich bod yn cadw'r Cerdyn Rhif Cod y Cyfranogwr fel y gellwch gyfeirio ato. Mae'r cod yn ddiennw a dim ond chi sy'n ei wybod. Mae'r rhif cod wedi ei roi yng nghornel dde uchaf tudalen flaen y llyfryn holiadur, fel y gall yr ymchwilydd dynnu eich data o'r astudiaeth os bydd angen.

3. Taflen Gyfarwyddiadau

Cofiwch ddarllen y Daflen Gyfarwyddiadau'n ofalus cyn i chi llenwi'r holiaduron.

4. Holiaduron

Darllenwch bob cwestiwn yn ofalus. Nid oes atebion cywir nac anghywir. Ceisiwch beidio â meddwl yn rhy hir am bob cwestiwn. Rhowch eich ymateb yn syth drwy roi cylch o amgylch y rhif neu'r ateb sy'n cyd-fynd orau â'ch barn neu safbwynt. Fe'ch anogir i ateb pob cwestiwn yn yr holiaduron mor agored a gonest â phosibl. Fodd bynnag, os nad ydych eisiau ateb cwestiwn gellwch ei adael yn wag. Bydd yr holl wybodaeth a roddwch yn cael ei chw' n hollol gyfrinachol ac ni fydd eich sefydliad yn cael gweld y llyfrynnau holiadur ar unrhyw adeg.

5. Amlen wedi'i stampio

Unwaith rydych wedi llenwi'r llyfryn holiadur, gofynnir i chi ei roi yn yr amlen wedi'i stampio a ddarparwyd a'i ddychwelyd ataf o fewn 14 diwrnod. Gwerthfawrogir yn fawr pe baech yn dychwelyd yr holiadur yn brydlon.

6. Taflenni Cyswllt

Os ydych yn pryderu am eich lles personol ar ôl llenwi'r holiaduron, fe'ch anogir i geisio cyngor proffesiynol priodol. Mae'r Daflen Cysylltiadau amgaeedig yn cynnwys rhifau'r gwasanaethau cefnogi a ddarperir gan eich cyflogwyr.

**Nawr eich bod wedi darllen y Daflen Gyfarwyddiadau, dechreuwch llenwi'r holiadur os gwelwch yn dda.
Diolch yn fawr iawn.**

Appendix D
Questionnaire Booklet

Code Number:

Questionnaire Booklet

Background Information Questionnaire

We would like to gather background information about you, in relation to the job that you do and the service you work within. This will enable us to compare differences between diverse staff groups and different forensic inpatient services.

About you:

1. **Age:** _____ (years)

2. **Gender:**

Male	<input type="checkbox"/>
Female	<input type="checkbox"/>

3. **Marital Status:**

Single	<input type="checkbox"/>
Cohabiting	<input type="checkbox"/>
Married	<input type="checkbox"/>
Separated	<input type="checkbox"/>
Divorced	<input type="checkbox"/>
Widowed	<input type="checkbox"/>

4. **Do you have dependent children living with you?**

Yes	<input type="checkbox"/>
No	<input type="checkbox"/>

5. **Do you have other dependants living with you?**

Yes	<input type="checkbox"/>
No	<input type="checkbox"/>

6. **Ethnic origin:**

White British	<input type="checkbox"/>
White Irish	<input type="checkbox"/>
White other	<input type="checkbox"/>
Black (African origin)	<input type="checkbox"/>
Black Caribbean origin)	<input type="checkbox"/>
Black (other)	<input type="checkbox"/>
Asian (Bangladeshi origin)	<input type="checkbox"/>
Asian (Chinese origin)	<input type="checkbox"/>
Asian (East African origin)	<input type="checkbox"/>
Asian (Indian origin)	<input type="checkbox"/>

- Asian (Pakistani origin)
- Asian (other)
- White and Black Caribbean
- White and Black African
- White and Asian
- Mixed other

7. Alcohol:

On average, how many units of alcohol do you drink per week? _____
 (e.g. 1 unit = half a pint of larger or 1 small glass of wine or 1 measure of spirit)

8. Smoking:

On average how many cigarettes do you smoke per week? _____
 On average, how many cigars do you smoke per week? _____

9. Caffeine:

How many cups of caffeinated drinks do you consume per day? _____
 (e.g. tea, coffee, coke)

10. Medication:

Do you take regular medication for mental health problems? Yes
 (e.g. anxiety, depression) No

11. Life events:

Have any major changes happened to you in the last 6 months (e.g. bereavement, divorce, marriage, having children, moving house and serious illness)

- Yes
- No

About your job:

1. Occupation: Your current job title: _____
 (e.g. staff nurse)

Your current grade or band _____
 (e.g. A, B, C or 1, 2, 3)

Your specialism(s): _____
 (e.g. Forensic, Learning Disability, Mental Health, General)

2. Length of time employed in forensic in-patient services: _____(years)

3. Length of time employed in current forensic inpatient service: _____(years)

4. How many hours are you contracted to work per week?

- 15 hours or less
- 16 to 25 hours
- 26 to 35 hours
- 36 to 45 hours
- 45 hours or more

4a. In your last full working week, how many hours did you actually work?

- 15 hours or less
- 16 to 25 hours
- 26 to 35 hours
- 36 to 45 hours
- 45 hours or more

4b. If you worked additional hours in your last working week:

How many additional hours were paid? _____(hours)
 How many additional hours were unpaid? _____(hours)
 How many additional hours will be taken as time in lieu? _____(hours)

- 5. Do you work shift hours?** Yes
- No

6. Annual leave:

How long is it since you last had a holiday of at least one week? _____(months)

7. Sick leave:

Have you been absent from work because of sickness in the past 6 months?

- Yes
- No

If so, how many days sick leave have you had in the past 6 months? _____(days)

About where you work:**1. Which forensic service do you work within?**

- The Casewell Clinic
- Cwn Seren
- Christchurch Hospital
- Llanarth Court
- Ty Llywelyn Medium Secure Unit (MSU)

2. What type of forensic ward/unit are you mainly employed to work in?

- Acute/Admissions
- Long-term/Rehabilitation
- Mental Illness
- Learning Disability
- Personality Disorder
- Other (please specify)

3. What gender patients do you mainly work with?

- Males
- Females
- Mixed

4. Supervision:

How many hours of supervision are you meant to receive per month? ____ (hours)

How many hours of supervision do you actually receive per month? ____ (hours)

Do you feel you receive adequate supervision? Yes

No

Additional comments:

Please make any additional comments in the space below about your job, organisation, questionnaire or research project.

MBI Human Services Survey

The purpose of this survey is to discover how various persons in the human services or helping professions view their jobs and the people with whom they work closely. Because persons in a wide variety of occupations will answer this survey, it uses the terms *recipients* to refer to the people for whom you provide your service, care, treatment, or instruction. When answering the survey please think of these people as recipients of the service you provide, even though you may use another term in your work.

Below there are 22 statements of job-related feelings. Please read each statement carefully and decide if you ever feel this way *about your job*. If you have *never* had this feeling, circle a "0" (zero). If you have had this feeling, indicate *how often* you feel it by circling the number (from 1 to 6) that best describes how frequently you feel that way.

How Often:	Never	A few times a year or less	Once a month or less	A few times in a month	Once a week	A few times a week	Every day
1. I feel emotionally drained from my work	0	1	2	3	4	5	6
2. I feel used up at the end of the workday	0	1	2	3	4	5	6
3. I feel fatigued when I get up in the morning and have to face another day on the job	0	1	2	3	4	5	6
4. I can easily understand how my recipients feel about things	0	1	2	3	4	5	6
5. I feel I treat some recipients as if they were impersonal objects	0	1	2	3	4	5	6
6. Working with people all day is really a strain for me	0	1	2	3	4	5	6
7. I deal very effectively with the problems of my recipients	0	1	2	3	4	5	6
8. I feel burned out from my work	0	1	2	3	4	5	6
9. I feel I'm positively influencing other people's lives through my work	0	1	2	3	4	5	6
10. I've become more callous toward people since I took this job	0	1	2	3	4	5	6

How Often:	Never	A few times a year or less	Once a month or less	A few times in a month	Once a week	A few times a week	Every day
11. I worry that this job is hardening me emotionally	0	1	2	3	4	5	6
12. I feel very energetic	0	1	2	3	4	5	6
13. I feel frustrated by my job	0	1	2	3	4	5	6
14. I feel I'm working too hard on my job	0	1	2	3	4	5	6
15. I don't really care what happens to some recipients	0	1	2	3	4	5	6
16. Working with people directly puts too much stress on me	0	1	2	3	4	5	6
17. I can easily create a relaxed atmosphere with my recipients	0	1	2	3	4	5	6
18. I feel exhilarated after working closely with my recipients	0	1	2	3	4	5	6
19. I have accomplished many worthwhile things in this job	0	1	2	3	4	5	6
20. I feel like I'm at the end of my rope	0	1	2	3	4	5	6
21. In my work, I deal with emotional problems very calmly	0	1	2	3	4	5	6
22. I feel recipients blame me for some of their problems	0	1	2	3	4	5	6

The Staff Stressor Questionnaire (SSQ)

The following statements are concerned with possible sources of stress in your job. Please read each statement carefully and decide how stressful you find each potential source of stress. For each statement you are asked to draw a circle around the response that best fits your view or experience. If you have never found an item stressful, draw circle around “0” (zero) next to the statement. If you have found an item stressful, indicate how stressful you find this, by drawing a circle around the number that best describes how much stress you feel.

	Not at all stressful	Just a little	Moderate amount	Quite a lot	A great deal
1. The physical working conditions	0	1	2	3	4
2. The work load	0	1	2	3	4
3. Lack of sufficient staff & resources	0	1	2	3	4
4. Low level of patient mobility	0	1	2	3	4
5. Doing domestic tasks	0	1	2	3	4
6. Low level of patient self-care skills	0	1	2	3	4
7. Uncertainty about what the job involves	0	1	2	3	4
8. Paperwork and administration	0	1	2	3	4
9. Lack of/slow progress of patients	0	1	2	3	4
10. Lack of support from outside work	0	1	2	3	4
11. Patients behaviour causing injury to others	0	1	2	3	4
12. Lack of support from management	0	1	2	3	4
13. Patients poor communication skills	0	1	2	3	4
14. Physical strength of patients	0	1	2	3	4
15. The hours of the job	0	1	2	3	4
16. Low levels of patients domestic skills & abilities	0	1	2	3	4
17. Lack of job security	0	1	2	3	4

	Not at all stressful	Just a little	Moderate amount	Quite a lot	A great deal
18. Patients self-injurious behaviour	0	1	2	3	4
19. Lack of procedures for effectively dealing with patients challenging behaviour	0	1	2	3	4
20. The pay	0	1	2	3	4
21. The organisations rules and regulations	0	1	2	3	4
22. Patients destruction of property	0	1	2	3	4
23. The emotional impact of the job	0	1	2	3	4
24. Patients stereotyped and/or bizarre behaviour	0	1	2	3	4
25. Lack of training opportunities	0	1	2	3	4
26. Unpredictable patients behaviour	0	1	2	3	4
27. Lack of support from colleagues	0	1	2	3	4
28. Patients inappropriate sexual behaviour	0	1	2	3	4
29. The routine of the working day	0	1	2	3	4
30. Lack of promotional prospects	0	1	2	3	4
31. Patients personal care levels	0	1	2	3	4
32. Lack of support from immediate supervisor	0	1	2	3	4
33. Conflicts between work and home commitments	0	1	2	3	4

The Brief COPE

We are interested in how people respond when they confront difficult or stressful events in their lives. There are lots of ways to try to deal with stress. This questionnaire asks you to indicate what you generally do and feel; when you experience stressful events. Obviously, different events bring out somewhat different responses, but think about what you usually do when you are under a lot of stress.

Then respond to each of the following items by circling one number on your answer sheet for each, using the response choices listed just below. Please try to respond to each item separately in your mind from each other item. Choose your answers thoughtfully, and make your answers as true for you as you can. Please answer every item. There are no "right" or "wrong" answers, so choose the most accurate answer for you, not what you think "most people" would say or do. Indicate what you usually do when you experience a stressful event.

	I haven't been doing this at all	I've been doing this a little bit	I've been doing this a medium amount	I've been doing this a lot
1. I've been turning to work or other activities to take my mind off things.	1	2	3	4
2. I've been concentrating my efforts on doing something about the situation I'm in.	1	2	3	4
3. I've been saying to myself "this isn't real".	1	2	3	4
4. I've been using alcohol or other drugs to make myself feel better.	1	2	3	4
5. I've been getting emotional support from others.	1	2	3	4
6. I've been giving up trying to deal with it.	1	2	3	4
7. I've been taking action to try to make the situation better.	1	2	3	4
8. I've been refusing to believe that it has happened.	1	2	3	4
9. I've been saying things to let my unpleasant feelings escape.	1	2	3	4
10. I've been getting help and advice from other people.	1	2	3	4
11. I've been using alcohol or other drugs to help me get through it.	1	2	3	4
12. I've been trying to see it in a different light, to make it seem more positive.	1	2	3	4
13. I've been criticizing myself.	1	2	3	4

	I haven't been doing this at all	I've been doing this a little bit	I've been doing this a medium amount	I've been doing this a lot
14. I've been trying to come up with a strategy about what to do.	1	2	3	4
15. I've been getting comfort and understanding from someone.	1	2	3	4
16. I've been giving up the attempt to cope.	1	2	3	4
17. I've been looking for something good in what is happening.	1	2	3	4
18. I've been making jokes about it.	1	2	3	4
19. I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.	1	2	3	4
20. I've been accepting the reality of the fact that it has happened.	1	2	3	4
21. I've been expressing my negative feelings.	1	2	3	4
22. I've been trying to find comfort in my religion or spiritual beliefs.	1	2	3	4
23. I've been trying to get advice or help from other people about what to do.	1	2	3	4
24. I've been learning to live with it.	1	2	3	4
25. I've been thinking hard about what steps to take.	1	2	3	4
26. I've been blaming myself for things that happened.	1	2	3	4
27. I've been praying or meditating.	1	2	3	4
28. I've been making fun of the situation.	1	2	3	4

The Five Facet Mindfulness Questionnaire – Short Form
--

Below is a collection of statements about your everyday experience. Using the 1–5 scale below, please indicate in the boxes to the right of each statement, how frequently or infrequently you have had each experience in the last month. Please answer according to what really reflects your experience rather than what you think your experiences should be.

	Never or rarely very true	Not often true	Sometimes true sometimes not true	Often true	Very often or always true
1. I'm good at finding the words to describe my feelings	1	2	3	4	5
2. I can easily put my beliefs, opinions, and expectations into words	1	2	3	4	5
3. I watch my feelings without getting carried away by them	1	2	3	4	5
4. I tell myself that I shouldn't be feeling the way I'm feeling	1	2	3	4	5
5. It's hard for me to find the words to describe what I'm thinking	1	2	3	4	5
6. I pay attention to physical experiences, such as the wind in my hair or sun on my face	1	2	3	4	5
7. I make judgments about whether my thoughts are good or bad	1	2	3	4	5
8. I find it difficult to stay focused on what's happening in the present moment	1	2	3	4	5
9. When I have distressing thoughts or images, I don't let myself be carried away by them	1	2	3	4	5
10. Generally, I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing	1	2	3	4	5
11. When I feel something in my body, it's hard for me to find the right words to describe it	1	2	3	4	5
12. It seems I am "running on automatic" without much awareness of what I'm doing	1	2	3	4	5

	Never or rarely very true	Not often true	Sometimes true sometimes not true	Often true	Very often or always true
13. When I have distressing thoughts or images, I feel calm soon after	1	2	3	4	5
14. I tell myself I shouldn't be thinking the way I'm thinking	1	2	3	4	5
15. I notice the smells and aromas of things	1	2	3	4	5
16. Even when I'm feeling terribly upset, I can find a way to put it into words	1	2	3	4	5
17. I rush through activities without being really attentive to them	1	2	3	4	5
18. Usually when I have distressing thoughts or images I can just notice them without reacting	1	2	3	4	5
19. I think some of my emotions are bad or inappropriate and I shouldn't feel them	1	2	3	4	5
20. I notice visual elements in art or nature, such as colours, shapes, textures, or patterns of light and shadow	1	2	3	4	5
21. When I have distressing thoughts or images, I just notice them and let them go	1	2	3	4	5
22. I do jobs or tasks automatically without being aware of what I'm doing	1	2	3	4	5
23. I find myself doing things without paying attention	1	2	3	4	5
24. I disapprove of myself when I have illogical ideas	1	2	3	4	5

Thank you very much for completing this questionnaire.

Can you now please return the questionnaire in the stamped address envelope enclosed.

Appendix E
Contact Sheets
(English and Welsh Versions)

Contacts Sheet (CC)

Some staff may become upset as a consequence of thinking about some of the stresses they experience at work. If you are concerned about your personal well-being after completing the questionnaires, you are encouraged to seek appropriate professional advice, such as from your GP. Your employers also provide access to the following support services for all employees.

Name: Occupational Health Department

Address: Template 15
Princess of Wales Hospital
Coity Road
Bridgend
CF31 1RQ

Tel: 01656 752158

Name: Staff Counselling Services

Address: Wellbeing Services
Block D
Neath Port Talbot Hospital
Baglan Moors
Port Talbot
SA12 7BX

Tel: 0845 6048178

Contacts Sheet (CH)

Some staff may become upset as a consequence of thinking about some of the stresses they experience at work. If you are concerned about your personal well-being after completing the questionnaires, you are encouraged to seek appropriate professional advice, such as from your GP. Your employers also provide access to the following support services for all employees.

Name: Employment Wellbeing Service

Address: Denbigh House
University Hospital of Wales
Health Park
Cardiff
CF14 4XW

Tel: 029 2074 4465

Contacts Sheet (CS)

Some staff may become upset as a consequence of thinking about some of the stresses they experience at work. If you are concerned about your personal well-being after completing the questionnaires, you are encouraged to seek appropriate professional advice, such as from your GP. Your employers also provide access to the following support services for all employees.

Name: Staff Psychological and Wellbeing Service

Address: Occupational Health Department
Withybush General Hospital
Haverfordwest
Pembrokeshire
SA61 2PZ

Tel: 01437 772527

Contacts Sheet (LC)

Some staff may become upset as a consequence of thinking about some of the stresses they experience at work. If you are concerned about your personal well-being after completing the questionnaires, you are encouraged to seek appropriate professional advice, such as from your GP. Your employers also provide access to the following support services for all employees.

Name: PiC Occupational Health Department

Address: Contact through line manager.

Name: Care First

Tel: 0800 174 319

Contacts Sheet (TL)

Some staff may become upset as a consequence of thinking about some of the stresses they experience at work. If you are concerned about your personal well-being after completing the questionnaires, you are encouraged to seek appropriate professional advice, such as from your GP. Your employers also provide access to the following support services for all employees.

Name: Occupational Health and Wellbeing Service

Address: Mountain View
Penrhos Road
Bangor
Gwynedd LL57 2NA

Tel: 01248 351 127

Name: CARE (Confidential Advice Relating to Employees)

Tel: 1815 8787 (internal)
017 454 487 87 (external)

Taflen Cysylltiadau (CC)

Gall meddwl am y straen y maent yn ei wynebu yn y gwaith gynhyrfu rhai aelodau staff. Os ydych yn pryderu am eich lles personol ar ôl llenwi'r holiaduron, fe'ch anogir i geisio cyngor proffesiynol priodol, megis gan eich meddyg teulu. Mae eich cyflogwyr hefyd yn darparu'r gwasanaethau cefnogi canlynol i'w holl weithwyr.

Enw: Adran Iechyd Galwedigaethol

Cyfeiriad: Template 15
Ysbyty Tywysoges Cymru
Ffordd Coity
Pen-y-bont ar Ogwr
CF31 1RQ

Ffôn: 01656 752158

Enw: Gwasanaethau Cwnsela Staff

Cyfeiriad: Gwasanaethau Lles
Bloc D
Ysbyty Castell Nedd – Port Talbot
Baglan Moors
Port Talbot
SA12 7BX

Ffôn: 0845 6048178

Taflen Cysylltiadau (CH)

Gall meddwl am y straen y maent yn ei wynebu yn y gwaith gynhyrfu rhai aelodau staff. Os ydych yn pryderu am eich lles personol ar ôl llenwi'r holiaduron, fe'ch anogir i geisio cyngor proffesiynol priodol, megis gan eich meddyg teulu. Mae eich cyflogwyr hefyd yn darparu'r gwasanaethau cefnogi canlynol i'w holl weithwyr.

Enw: Gwasanaeth Lles yn y Gwaith

Cyfeiriad: Denbigh House
Ysbyty Prifysgol Cymru
Parc Iechyd
Caerdydd
CF14 4XW

Ffôn: 029 2074 4465

Taflen Cysylltiadau (CS)

Gall meddwl am y straen y maent yn ei wynebu yn y gwaith gynhyrfu rhai aelodau staff. Os ydych yn pryderu am eich lles personol ar ôl llenwi'r holiaduron, fe'ch anogir i geisio cyngor proffesiynol priodol, megis gan eich meddyg teulu. Mae eich cyflogwyr hefyd yn darparu'r gwasanaethau cefnogi canlynol i'w holl weithwyr.

Enw: Gwasanaeth Seicolegol a Lles i Staff

Cyfeiriad: Adran Iechyd Galwedigaethol
Ysbyty Cyffredinol Llwyn Helyg
Hwlfordd
Sir Benfro
SA61 2PZ

Ffôn: 01437 772527

Taflen Gysylltiadau (LC)

Gall meddwl am y straen y maent yn ei wynebu yn y gwaith gynhyrfu rhai aelodau staff. Os ydych yn pryderu am eich lles personol ar ôl llenwi'r holiaduron, fe'ch anogir i geisio cyngor proffesiynol priodol, megis gan eich meddyg teulu. Mae eich cyflogwyr hefyd yn darparu'r gwasanaethau cefnogi canlynol i'w holl weithwyr.

Enw: Adran Iechyd Galwedigaethol PiC

Cyfeiriad: Cysylltiad drwy'r rheolwr llinell.

Enw: Care First

Ffôn: 0800 174 319

Taflen Cysylltiadau (TL)

Gall meddwl am y straen y maent yn ei wynebu yn y gwaith gynhyrfu rhai aelodau staff. Os ydych yn pryderu am eich lles personol ar ôl llenwi'r holiaduron, fe'ch anogir i geisio cyngor proffesiynol priodol, megis gan eich meddyg teulu. Mae eich cyflogwyr hefyd yn darparu'r gwasanaethau cefnogi canlynol i'w holl weithwyr.

Enw: Gwasanaeth Iechyd a Lles Galwedigaethol

Cyfeiriad: Mountain View
Ffordd Penrhos
Bangor
Gwynedd
LL57 2NA

Ffôn: 01248 351 127

Enw: CARE (Confidential Advice Relating to Employees)

Ffôn: 1815 8787 (mewnol)
017 454 487 87 (allanol)

Appendix F
School of Psychology Research
and Ethics Committee
Bangor University
Approval Email

Dear Sarah,

2014-11385 The role of mindfulness and coping on burnout and occupational stress amongst health care professionals employed within forensic inpatient settings.

Your research proposal number 2014-11385 has been reviewed by the School of Psychology Ethics and Research Committee and the committee are now able to confirm ethical and governance approval for the above research on the basis described in the application form, protocol and supporting documentation. This approval lasts for a maximum of three years from this date.

Ethical approval is granted for the study as it was explicitly described in the application

If you wish to make any non-trivial modifications to the research project, please submit an amendment form to the committee, and copies of any of the original documents reviewed which have been altered as a result of the amendment. Please also inform the committee immediately if participants experience any unanticipated harm as a result of taking part in your research, or if any adverse reactions are reported in subsequent literature using the same technique elsewhere.

Governance approval is granted for the study as it was explicitly described in the application and we are happy to confirm that this study is now covered by the University's indemnity policy.

If any new researchers join the study, or any changes are made to the way the study is funded, or changes that alter the risks associated with the study, then please submit an amendment form to the committee.

Yours sincerely

Everil McQuarrie

Rhif Elusen Gofrestredig / Registered Charity No. 1141565

Mae'r e-bost yma'n amodol ar delerau ac amodau ymwadiad e-bost Prifysgol Bangor. Gellir darllen testun llawn yr ymwadiad yma:

<http://www.bangor.ac.uk/emaildisclaimer>

This email is subject to the terms and conditions of the Bangor University email disclaimer. The full text of the disclaimer can be read here:

<http://www.bangor.ac.uk/emaildisclaimer>

Appendix G

NHS Wales Research Ethics Committee

Approval Letter

Part of the research infrastructure for Wales funded by the National Institute for Social Care and Health Research, Welsh Government.
Yn rhan o seilwaith ymchwil Cymru a ariannir gan y Sefydliad Cenedlaethol ar gyfer Ymchwil Gofal Cymdeithasol ac Iechyd, Llywodraeth Cymru



**Pwyllgor Moeseg Ymchwil Cymru 5
Wales Research Ethics Committee 5
Bangor**

Clinical Academic Office
Ysbyty Gwynedd Hospital
Betsi Cadwaladr University Health Board
Bangor, Gwynedd
LL57 2PW

Telephone/ Facsimile: 01248 - 384.877
Email: Rossela.Roberts@wales.nhs.uk
Website : www.nres.nhs.uk

Miss Sarah Angela Kriakous
Trainee Clinical Psychologist
North Wales Clinical Psychology Programme
Bangor University, 43 College Road
Bangor
LL57 2DG psp0cd@bangor.ac.uk

08 July 2014

Dear Miss Kriakous,

Study title: The role of mindfulness and coping on burnout and occupational stress amongst health care professionals employed within forensic inpatient settings
REC reference: 14/WA/1034
IRAS project ID: 142705

Thank you for your letter of , responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information has been considered on behalf of the Committee by the Chair.

We plan to publish your research summary wording for the above study on the HRA website, together with your contact details. Publication will be no earlier than three months from the date of this opinion letter. Should you wish to provide a substitute contact point, require further information, or wish to make a request to postpone publication, please contact the REC Manager, Dr Rossela Roberts, rossela.roberts@wales.nhs.uk

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised, subject to the conditions specified below.

Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.

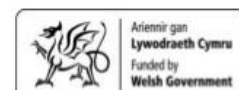
Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

Management permission ("R&D approval") should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements.

Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at <http://www.rdforum.nhs.uk>.



Cynhelir Cydweithrediad Gwyddor Iechyd Academaidd y Sefydliad Cenedlaethol ar gyfer Ymchwil Gofal Cymdeithasol ac Iechyd gan Fwrdd Addysgu Iechyd Powys
The National Institute for Social Care and Health Research Academic Health Science Collaboration is hosted by Powys Teaching Health Board



14/WA/1034

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Where a NHS organisation's role in the study is limited to identifying and referring potential participants to research sites ("participant identification centre"), guidance should be sought from the R&D office on the information it requires to give permission for this activity.

For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.

Sponsors are not required to notify the Committee of approvals from host organisations

Registration of Clinical Trials

All clinical trials (defined as the first four categories on the IRAS filter page) must be registered on a publicly accessible database within 6 weeks of recruitment of the first participant (for medical device studies, within the timeline determined by the current registration and publication trees).

There is no requirement to separately notify the REC but you should do so at the earliest opportunity e.g when submitting an amendment. We will audit the registration details as part of the annual progress reporting process.

To ensure transparency in research, we strongly recommend that all research is registered but for non clinical trials this is not currently mandatory.

If a sponsor wishes to contest the need for registration they should contact Catherine Blewett (catherineblewett@nhs.net), the HRA does not, however, expect exceptions to be made. Guidance on where to register is provided within IRAS.

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

Ethical review of research sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion").

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

<i>Document</i>	<i>Version</i>	<i>Date</i>
REC Application Form		02 June 2014
Research Proposal	II	
Participant information sheet	3	01 July 2014
Other [Contacts Sheet BCUHB]	1	08 December 2013
Other [Instruction Sheet]	2	30 June 2014
Non-Validated Questionnaire [Background Information Questionnaire]	2	30 June 2014
Validated Questionnaire [MBI Human Services Survey]	-	-
Validated Questionnaire [The Staff Stressor Questionnaire]	-	-
Validated Questionnaire [The Brief COPE]	-	-
Validated Questionnaire [The Five Facet Mindfulness Questionnaire]	-	-
Summary CV for Chief Investigator [Sarah Kriakous]	-	-
Summary CV for supervisor (student research) [Katie Ann Elliott]	-	06 December 2013
Summary CV for supervisor (student research) [CV Robin Owen]	-	06 December 2013
Evidence of Sponsor insurance or indemnity	-	11 July 2013
Response to request for further information	-	07 July 2014

(end of list)

14/WA/1034

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Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical reviewReporting requirements

The attached document "*After ethical review – guidance for researchers*" gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Notification of serious breaches of the protocol
- Progress and safety reports
- Notifying the end of the study

The HRA website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

Feedback

You are invited to give your view of the service that you have received from the National Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the HRA website:

<http://www.hra.nhs.uk/about-the-hra/governance/quality-assurance/>

We are pleased to welcome researchers and R & D staff at our NRES committee members' training days – see details at <http://www.hra.nhs.uk/hra-training/>

14/WA/1034 Please quote this number on all correspondence

With the Committee's best wishes for the success of this project.

Yours sincerely



P

**Mr Derek James Crawford, MBChB, FRCS
Chair**

E-mail: rossela.roberts@wales.nhs.uk

Enclosure: "After ethical review – guidance for researchers"

14/WA/1034


Page 4 of 4

Copy: Sponsor: Mr Hefin Francis
School Manager
School of Psychology
Bangor University
Brigantia Building, Penrallt Rd
Bangor, Gwynedd,
LL57 2AS h.francis@bangor.ac.uk

Academic Supervisor: Dr Katie Ann Elliott
North Wales Forensic Psychiatric Service
Ty Llywelyn Medium Secure Unit
Bryn Y Neuadd Hospital, Llanfairfechan, Conwy
LL33 OHH katie.elliott@nhs.wales.uk

R&D Office: Mr Sion Lewis
Clinical Academic Office
Ysbyty Gwynedd Hospital
Betsi Cadwaladr University Health Board
Bangor, Gwynedd
LL57 2PW sion.lewis@wales.nhs.uk

Appendix H
Research and Development Unit
Approval Letters

 Bwrdd Iechyd Prifysgol Hywel Dda Hywel Dda University Health Board	Research & Development Department		
	Dr Lisa Seale, Senior R&D Manager – lisa.seale@wales.nhs.uk		
	Chris Tattersall, R&D Manager – chris.tattersall@wales.nhs.uk		
	Alison Armitage-Hicks, R&D Coordinator – alison.armitage-hicks@wales.nhs.uk Rachel Roberts, Portfolio Coordinator – rachel.roberts3@wales.nhs.uk		

Ref: CT/aah/Ref: HD/14/039

Date: 17.7.14

Miss Sarah Kriakous
 Trainee Clinical Psychologist
 North Wales Clinical Psychology Programme
 Bangor University
 43 College Road
 Bangor
 LL57 2DG

Chris Tattersall
Research & Development Manager
Withybush General Hospital
 Fishguard Road
 Haverfordwest
 Pembrokeshire
 SA62 1PZ
 Tel: 01437 773813

Ysbyty Cyffredinol Llwynhelyg
 Heol Abergwaun, Hwlfordd,
 Sir Benfro, SA61 2PZ
 Rhif Ffôn: 01437 763813

Dear Miss Kriakous

R&D Ref	HD/14/039		
Project Title	The role of mindfulness and coping on burnout and occupational stress amongst health professionals employed within forensic inpatient settings		
REC Ref	14/WA/1034	IRAS Ref	142705
Latest Amendment	n/a	Amendment Date	
Latest Protocol	Version 2.0	Protocol Date	Signed 14 June 2013
Site	Cwm Seren, Hafan Derwen, Carmarthen		

Thank you for submitting your proposal to us for approval for the project to be carried out within this Health Board. Among the documentation considered in support of your application are the following documents:

Document	Version	Dated
Protocol	Version 2.0	Signed 14 June 2014
Participant Information Sheet	Version 3.0	1 July 2014
Occupational Health Contact Sheet: HDUHB	Version 1.0	29 May 2014
Instruction Sheet	Version 1.0	09 December 2013
LSRP Questionnaires	Version 1.0	13 March 2014
REC Approval Letter		8 July 2014

All Research Governance checks have been completed and passed. I have received the comments from the review panel and have not received any objections to the project going ahead. Please accept this letter as approval for the project to proceed in Hywel Dda University Health Board at the sites listed, following study initiation visits if appropriate.

1 / 3		
Pencadlys Bwrdd Iechyd Prifysgol Hywel Dda, Llys Myrddin, Lôn Winch, Hwlfordd, Sir Benfro, SA61 1SB Rhif Ffôn: (01437) 771220 Rhif Ffacs: (01437) 771222	Hywel Dda University Health Board Headquarters Merlins Court, Winch Lane, Haverfordwest, Pembrokeshire, SA61 1SB Tel: (01437) 771220 Fax: (01437) 771222 <i>Bwrdd Iechyd Prifysgol Hywel Dda yw enw gweithredo! Bwrdd Iechyd Lleol Hywel Dda</i> <i>Hywel Dda Health Board is the operational name of Hywel Dda Local Health Board</i>	Cadeirydd / Chairman Mr Chris Martin Prif Weithredwr / Chief Executive Mr Trevor Purt

 GIG Cymru NHS WALES Bwrdd Iechyd Prifysgol Hywel Dda Hywel Dda University Health Board	Research & Development Department
	Dr Lisa Seale, Senior R&D Manager – lisa.seale@wales.nhs.uk
	Chris Tattersall, R&D Manager – chris.tattersall@wales.nhs.uk
	Alison Armitage-Hicks, R&D Coordinator – alison.armitage-hicks@wales.nhs.uk Rachel Roberts, Portfolio Coordinator – rachel.roberts3@wales.nhs.uk

Under Research Governance, you are required to:

- Adhere to the protocol approved by the REC and inform the R&D office of any changes (including changes to the end date of the project) and ensure any changes are referred to the Research Ethics Committee(s) or any other regulatory authorities as appropriate.
- Adhere to the sponsors Standard Operating Procedures. Health Board sponsored SOPs can be found on the Health Board Intranet site or via the R&D office.
- Inform the R&D Office of any relevant adverse/serious adverse events that may occur, whilst also reporting these through the proper channels in the Health Board, and according to the sponsor's protocol and procedures.
- Complete any interim and final reports requested by the R&D Office. If sponsored by this Health Board, you will be asked to present your findings on completion.
- Comply with the Welsh Government Research Governance Framework for Health & Social Care in Wales (2nd Edition 2009) and co-operate with any audit inspection of the project files.
- Ensure that your research complies with regulatory requirements and legislation relating to: Clinical Trials, Data Protection Act 1998, Health & Safety, Caldicott Guidelines, ICH Good Clinical Practice (GCP) and the use of Human Tissue for research purposes, as appropriate for the duration of the study.
- Ensure that all training courses requested by the Sponsor are completed successfully by all relevant members of the research team before any research activity is carried out. All research staff undertaking clinical trials of an investigational medicinal product (CTimps) must be GCP trained, and should continue to update their GCP training every 2 years. Copies of GCP certificates should be filed in the TSF and forwarded to the R&D Department.
- All researchers should be in receipt of the relevant Personnel/HR documentation in order to conduct research activity in the Health Board.

In addition:

- It is the local research lead's responsibility to upload recruitment data in all portfolio studies using the following link:
http://www.crncc.nihr.ac.uk/about_us/processes/portfolio/p_recruitment . If you need any support in uploading this data, please contact the Research & Development Department.
- For non-portfolio studies the local research lead should inform the R&D department of their quarterly recruitment figures (or as requested by the department) and the date of first recruited patient.


2 / 3	
Pencadlys Bwrdd Iechyd Prifysgol Hywel Dda, Llys Myrddin, Lôn Winch, Hwlfordd, Sir Benfro, SA61 1SB Rhif Ffôn: (01437) 771220 Rhif Ffacs: (01437) 771222	Hywel Dda University Health Board Headquarters Merlins Court, Winch Lane, Haverfordwest, Pembrokeshire, SA61 1SB Tel: (01437) 771220 Fax: (01437) 771222 <i>Bwrdd Iechyd Prifysgol Hywel Dda yw enw gweithredo! Bwrdd Iechyd Lleol Hywel Dda</i> <i>Hywel Dda Health Board is the operational name of Hywel Dda Local Health Board</i>
	Cadeirydd / Chairman Mr Chris Martin Prif Weithredwr / Chief Executive Mr Trevor Purk

 GIG CYMRU NHS WALES Bwrdd Iechyd Prifysgol Hywel Dda Hywel Dda University Health Board	Research & Development Department
	Dr Lisa Seale, Senior R&D Manager – lisa.seale@wales.nhs.uk
	Chris Tattersall, R&D Manager – chris.tattersall@wales.nhs.uk
	Alison Armitage-Hicks, R&D Coordinator – alison.armitage-hicks@wales.nhs.uk Rachel Roberts, Portfolio Coordinator – rachel.roberts3@wales.nhs.uk

- To apply for adoption onto the NISCHR CRP, please go to: <http://www.wales.nhs.uk/sites3/page.cfm?orgid=580&pid=31979>. Once adopted, NISCHR CRP studies may be eligible for additional support through the NISCHR Clinical Research Centre. Further information can be found at: <http://www.wales.nhs.uk/sites3/page.cfm?orgid=580&pid=28571> and/or from your NHS R&D office colleagues.
- Please note that if you wish to extend your project to other sites within the Health Board, or to other Health Boards or NHS bodies you must obtain the approval of all NHS bodies concerned. If the project is sponsored by this Health Board you must notify the R&D Office. Failure to notify may result in suspension or closure of the project.

With all good wishes for the research.

Yours sincerely



Chris Tattersall
R&D Manager
Hywel Dda University Health Board

cc.

Dr Hugh Dafforn - Hugh.Dafforn@wales.nhs.uk
 Consultant Clinical Psychologist
 Hywel Dda University Health Board
 Cwm Seren
 Hafan Derwen
 Parc Dewi Sant
 Carmarthen
 SA31 3BB

Dr Katie-Ann Elliott – katie.elliott@wales.nhs.uk
 Academic Supervisor
 North Wales Forensic Psychiatric Service
 Ty Llewelyn Medium Secure Unit
 Bryn y Neuadd Hospital
 Llanfairfechan
 Conwy
 LL33 0HH

3 / 3		
Pencadlys Bwrdd Iechyd Prifysgol Hywel Dda, Llys Myrddin, Lôn Winch, Hwlfordd, Sir Benfro, SA61 1SB Rhif Ffôn: (01437) 771220 Rhif Ffacs: (01437) 771222	Hywel Dda University Health Board Headquarters Merlins Court, Winch Lane, Haverfordwest, Pembrokeshire, SA61 1SB Tel: (01437) 771220 Fax: (01437) 771222 <i>Bwrdd Iechyd Prifysgol Hywel Dda yw enw gweithredo! Bwrdd Iechyd Lleol Hywel Dda</i> <i>Hywel Dda Health Board is the operational name of Hywel Dda Local Health Board</i>	Cadeirydd / Chairman Mr Chris Martin Prif Weithredwr / Chief Executive Mr Trevor Purt



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WALES
Bwrdd Iechyd Prifysgol
Betsi Cadwaladr
University Health Board

**Panel Arolygu Mewnol Y&D
R&D Internal Review Panel**

Betsi Cadwaladr University Health Board
Ysbyty Gwynedd
Clinical Academic Office
Bangor, Gwynedd
LL57 2PW

Miss Sarah Kriakous
Trainee Clinical Psychologist
North Wales Clinical Psychology Programme
Bangor University
LL57 2DG
psp0cd@bangor.ac.uk

Chairman/Cadeirydd – Dr Nefyn Williams PhD, FRCGP
Email: rossela.roberts@wales.nhs.uk
wendy.scrase2@wales.nhs.uk
sion.lewis@wales.nhs.uk
Tel/Fax: 01248 384 877

21 July 2014

Dear Miss Kriakous,

Re: Confirmation that R&D governance checks are complete / R&D approval granted

Study Title The role of mindfulness and coping on burnout and occupational stress amongst health care professionals employed within forensic inpatient settings
IRAS reference 142705

Thank you for submitting your R&D application and supporting documents.
The above study was eligible for Proportionate Review and was reviewed by the R&D Manager and Chairman of the Internal Review Panel.

The Committee is satisfied with the scientific validity of the project, the risk assessment, the review of the NHS cost and resource implications and all other research management issues pertaining to the revised application.

The Proportionate Review Committee is pleased to confirm that all governance checks are now complete and to grant approval to proceed at Betsi Cadwaladr University Health Board sites as described in the application.

The documents reviewed and approved are listed below:

Document:	Version	Date
R&D Form	-	30/05/2014
SSI Checklist	-	-
SSI Form	-	30/05/2014
Protocol	2	-
Participant Information Sheet	2	21/01/2014
Instruction Sheet	1	09/12/2013
Questionnaires	1	13/03/2014
CV of Student	-	-

All research conducted at the Betsi Cadwaladr University Health Board sites must comply with the Research Governance Framework for Health and Social Care in Wales (2009).
An electronic link to this document is provided on the BCUHB R&D WebPages.
Alternatively, you may obtain a paper copy of this document via the R&D Office.

Attached you will find a set of approval conditions outlining your responsibilities during the course of this research. Failure to comply with the approval conditions will result in the withdrawal of the approval to conduct this research in the Betsi Cadwaladr University Health Board.

If your study is adopted onto the NISCHR Clinical Research Portfolio (CRP), it will be a condition of this NHS research permission, that the Chief Investigator will be required to regularly upload recruitment data onto the portfolio database.

To apply for adoption onto the NISCHR CRP, please go to:
<http://www.wales.nhs.uk/sites3/page.cfm?orgid=580&pid=31979>.

Once adopted, NISCHR CRP studies may be eligible for additional support through the NISCHR Clinical Research Centre. Further information can be found at:
<http://www.wales.nhs.uk/sites3/page.cfm?orgid=580&pid=28571> and/or from your NHS R&D office colleagues.

To upload recruitment data, please follow this link:
http://www.crnc.nihr.ac.uk/about_us/processes/portfolio/p_recruitment.
Uploading recruitment data will enable NISCHR to monitor research activity within NHS organizations, leading to NHS R&D allocations which are activity driven. Uploading of recruitment data will be monitored by your colleagues in the R&D office.
If you need any support in uploading this data, please contact wendy.scrase2@wales.nhs.uk or sion.lewis@wales.nhs.uk

If you would like further information on any other points covered by this letter please do not hesitate to contact me.

On behalf of the Committee, may I take this opportunity to wish you every success with your research.

Yours sincerely,



Dr Nefyn Williams PhD, FRCGP
Associate Director of R&D
Chairman Internal Review Panel

Copy to:

Academic Supervisor: Dr Katie Elliott
North Wales Forensic Psychiatric Service
Ty Llywelyn
Bryn Y Neuadd Hospital
Llanfairfechan
LL33 0HH katie.elliott@wales.nhs.uk

Academic Supervisor: Dr Robin Owen
North Wales Forensic Psychiatric Service
Ty Llywelyn
Bryn Y Neuadd Hospital
Llanfairfechan
LL33 0HH robin.owen2@wales.nhs.uk



Dyddiad/Date: 30th September 2014

Miss Sarah Angela Kriakous
North Wales Clinical Psychology Programme
Bangor University
43 College Road
Bangor
LL57 2DG

☎ 01792 704056
☎ 01792 545774
✉ abm.rd@wales.nhs.uk

Dear Miss Kriakous

Re: The role of coping and mindfulness on burnout and occupational stress

IRAS Ref: 142705

Sponsor: Bangor University School of Psychology

Thank you for submitting the above named research proposal to ABMU Health Board for NHS R&D permission. The attached listed documents were reviewed.

Health Board R&D Governance checks have been completed and passed. Please accept this letter as confirmation of local NHS R&D Health Board permission.

As part of Research Governance, you are required to:

1. Adhere to the protocol approved and inform the R&D office and the relevant Research Ethics Committee of any changes to the study, including the end date, for review/approval and record update.
2. For Health Board Sponsored studies, notify the R&D office of serious adverse events immediately upon knowledge, in accordance with local Standard Operating Procedure on Pharmacovigilance and as outlined in your Study Initiation meeting.
3. For Externally Sponsored studies, the Health Board should only be notified of SAEs or Suspected Unexpected Serious Adverse Reaction (SUSAR) arising in local ABMU Patients.
4. Complete any interim and final reports requested by the R&D office. If sponsored by ABMU Health Board, you will be asked to complete a 6 monthly progress report for submission to the Joint Scientific Review Committee along with your final report at study completion.
5. Ensure that your research complies with any relevant regulatory requirements and legislation relating to: Clinical Trials, Data Protection Act 1998, Health & Safety, Caldicott Guidelines, the use of Human Tissue for research purposes, Mental Capacity and ICH Good Clinical Practice (GCP). The R&D team can advise you on applicable regulatory and statutory requirements relevant to your study.
6. Comply with Data Protection requirements, notably no personal or patient identifiable data should leave the Health Board unless explicit consent from the individual or patient has been taken and documented. Unless consent is present, all study related documents must be either fully or linked anonymised. *'Identifiable patient data includes name, address, full postcode, date of birth, NHS number and local patient identifiable codes as well as photographs, videos, audio tapes or other images of patients. Personal identifiable information includes the member of staff's name, address, full post code, date of birth, NI number and staff number as well as photographs etc'* – ABMU Data Protection & Confidentiality Policy, Version 2.1 September 2013.

Bwrdd Iechyd ABM yw enw gweithredu Bwrdd Iechyd Lleol Prifysgol Abertawe Bro Morgannwg
ABM University Health Board is the operational name of Abertawe Bro Morgannwg University Local Health Board
Pencadlys ABM / ABM Headquarters, 1 Talbot Gateway, Port Talbot, SA12 7BR. Ffon / Tel: (01639) 683344
www.abm.wales.nhs.uk

7. Ensure that all training courses requested by the Sponsor are completed by all relevant members of the research team before any research activity is carried out. All research staff undertaking clinical trials of an investigational medicinal product (CTIMPs) must be GCP trained, and should continue to update their GCP training every 2 years. Copies of GCP certificates should be filed in the Trial Site File, with a copy forwarded to the R&D Department.
8. Ensure the research is undertaken in compliance with all Health Board R&D Standard Operating Procedures (SOPs). The latest versions of all SOPs can be obtained by contacting the R&D Department or from the R&D Intranet pages
9. If the study is sponsored by ABMU Health Board you must notify the R&D Office of your intention to open the study in other sites.
10. For ABMU Health Board Sponsored studies, sign a Conditions of Sponsorship Agreement & attend a Study Initiation meeting as organised by the R&D Department.

NISCHR Clinical Research Portfolio Studies

If your study has been adopted onto the NISCHR Clinical Research Portfolio (CRP), it will be a condition of our permission that the Chief Investigator site uploads local recruitment data onto the portfolio database.

For more information on the process of uploading recruitment data please look at the following link:
<http://www.crnc.nhr.ac.uk/aboutus/processes/portfolio/precruitment>

Uploading of recruitment data will enable NISCHR to monitor research activity within Health Boards, resulting in NHS R&D allocations to be driven by activity.

For more information and advice on the NISCHR Clinical Research Portfolio please email:
portfolio@wales.nhs.uk

Amendments to the Study

Any changes made to the study after the issue of this letter will be treated as an amendment. Amendments can be 'substantial' or 'non-substantial'. It is the duty of the Sponsor to classify the amendment and notify all relevant regulatory bodies accordingly, this duty may be delegated to the Chief Investigator or other authorised individual.

For a substantial amendment, the Sponsor or delegated individual will be required to submit a Notice of Substantial Amendment form to the REC, NISCHR PCU and MHRA (if applicable). For all ABMU sponsored studies substantial amendments must first be submitted to the JSRC for approval prior to submitting to REC and NISCHR PCU (NISCHR.PCU.Allwales@wales.nhs.uk)

For non-substantial amendments, the Sponsor or delegated individual are required to simply notify the ABMU R&D Department and relevant REC via e-mail or letter of the proposed non-substantial amendment.

Details of how to classify your amendment as substantial or non-substantial are available from Health Research Authority - <http://www.hra.nhs.uk/research-community/during-your-research-project/amendments/>

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www.abm.wales.nhs.uk

Indemnity Arrangements

The Sponsor indemnifies and holds harmless ABM University Health Board, its employees and agents for any harm caused by negligence on behalf of the Sponsor, including any harm caused to participants by the administration of the investigational product. However, please note that the Sponsor will not indemnify ABM University Health Board for any harm caused by negligence on behalf of the research team or other individual or agent.

Please discuss any planned use of in-house work instructions/sops with the Sponsor company during Initiation to ensure localised documents correctly summarise the protocol requirements and this is agreed to, in writing, by the Sponsor Company.

Researchers employed by ABM University Health Board, including those holding Honorary Contract status are indemnified against actions for negligent harm via standard arrangements with Welsh Risk Pool (WRP). Provision for 'no-fault' compensation is limited under the scheme and is only available on an ex gratia, discretionary basis where the Sponsor is a NHS Organisation.

ABM University Health Board reserves the right to suspend approval of any research study where deviation from appropriate RG & GCP standards is uncovered.

May I take this opportunity to wish you well in undertaking the research. We will write to you in the future to request updates on the progress of the research and look forward to receiving outcomes of the study.

Yours sincerely,



PP

Professor SC Bain
Assistant Medical Director (R&D)
ABMU Health Board

Re: The role of coping and mindfulness on burnout and occupational stress
IRAS Ref: 142705
Sponsor: Bangor University School of Psychology

SSI Documents Received

Document:	Subtitle:	Version:
Non-validated questionnaire	LSRP Questionnaires	v2 08 Jul 2014
Other (please specify)	ABMU CD approval	
Other (please specify)	Contacts Sheet Caswell Clinic	v1 20 Jul 2014
Other (please specify)	Instruction Sheet V2 30 06 14	v2 30 Jun 2014
Research participant information sheet (PIS)	PIS	v3 01 Jul 2014
Site-Specific Information Form (signed/authorised pdf or hard copy)	ABM UHB	16 Aug 2014
Site-Specific Information form checklist	ABM UHB	
Summary CV for Principal Investigator (PI)	Thomas Hoare	v1 13 Aug 2014

Re: The role of coping and mindfulness on burnout and occupational stress**IRAS Ref: 142705****Sponsor: Bangor University School of Psychology****R&D Application Documents Received**

Document:	Subtitle:	Version:
Evidence of insurance or indemnity (non-NHS sponsors only)	31 July 2015	
Evidence of insurance or indemnity (non-NHS sponsors only)	UMAL (Exp 31 Jul 2014)	31 Jul 2014
Evidence of insurance or indemnity (non-NHS sponsors only)	UMAL - expires 31 JUL 2014	11 JUL 2013
Non-validated questionnaire	Background Information Questionnaire	v2 30 Jun 14
Non-validated questionnaire	Study Questionnaire Pack	V1, 13 MAR 2014
Other (please specify)	Acknowledgement of receipt of amended proposal - Dr. Katie Ann Elliott	16 Jul 2013
Other (please specify)	Instruction Sheet	V2 30 Jun 14
Other (please specify)	Contacts Sheet - BCUHB Occupational Health and Wellbeing Service	V1, 08 DEC 2013
R&D Application checklist		
R&D Form (Parts A-D) (signed/authorised pdf or hard copy)		02 JUN 2014
REC favourable opinion letter and all correspondence	Response to REC Provisional opinion	07 Jul 2014
REC favourable opinion letter and all correspondence	Provisional opinion	23 Jun 2014
REC favourable opinion letter and all correspondence	Favourable opinion	08 Jul 2014
Research participant information sheet (PIS)	PIS	V3 01 Jul 14
Research participant information sheet (PIS)	PIS - Instruction Sheet	09 DEC 2013
Research participant information sheet (PIS)		V2, 21 JAN 2014
Research protocol		V II, 14 JUN 2013
Summary CV for Academic Supervisor	Dr K Elliot - unsigned	06 DEC 2012
Summary CV for Academic Supervisor	Dr Robin Owen - unsigned	06 DEC 2013
Summary CV for Chief Investigator (CI)	Ms S Kriakous	V1, 09 DEC 2013
University Ethics Committee Correspondence	Bangor University Ethics Application Approved	06 Feb 2014
Written final confirmation from the organisation(s) acting as sponsor	Study and budget approval - Dr. Richard Hastings, Director of Research, Bangor University	17 Jul 2013



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Bwrdd Iechyd Prifysgol
Caerdydd a'r Fro
Cardiff and Vale
University Health Board

Ysbyty Athrofaol Cymru
University Hospital of Wales

Heath Park,
Cardiff, CF14 4XW
Phone 029 2074 7747
Fax 029 2074 3838
Minicom 029 2074 3332

Parc Y Mynydd Bychan,
Coerdydd, CF14 4XW
Ffôn 029 2074 7747
Ffacs 029 20743838
Minicom 029 2074 3632

Tel: 029 20746986
Fax: 029 20745311
CAV_Research.Development@wales.nhs.uk

From: Professor C Fegan
R&D Director
R&D Office, 2nd Floor TB2
University Hospital of Wales
Cardiff
CF14 4XW

22 October 2014

Mr Robert Kidd
Consultant Clinical and Forensic Psychologist
Whitchurch Hospital
Park Road
Cardiff
CF14 7XB

Dear Mr Kidd

Cardiff and Vale UHB Ref and Study Title : 14/MEH/6050 : The Role Of Mindfulness And Coping On Burnout And Occupational Stress Amongst Health Care Professional Employed Within Forensic Inpatient Settings

IRAS Project ID: 142705

The above project was forwarded to Cardiff and Vale University Health Board R&D Office by the NISCHR Permissions Coordinating Unit. A Governance Review has now been completed on the project.

Documents approved for use in this study are:

Document	Version	Date of document
NHS R&D Form	3.5	Received 24/09/2014
SSI Form	3.5	Received 24/09/2014
Protocol	II	14/06/2013
Participant Information Sheet	3	01/07/2014
Instruction Sheet	2	30/06/2014
Questionnaire: Background	2	08/07/2014
Contacts Sheet	1	21/08/2014

I am pleased to inform you that the UHB has no objection to your proposal. You have informed us that the University of Bangor is willing to act as Sponsor under the Research Governance Framework for Health and Social Care.

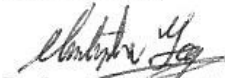
Please accept this letter as confirmation of permission for the project to begin within this UHB.

Because NISCHR has determined that this study is ineligible for adoption onto the Clinical Research Portfolio and your Directorate R&D Lead has determined that it does not meet the criteria for Pathway-to-Portfolio, the study will incur a £200 R&D set-up fee. The UHB Finance Department will invoice the Directorate / request transfer of funds from the Directorate accordingly.

May I take this opportunity to wish you success with the project and remind you that as Principal Investigator you are required to:

- Inform the R&D Office if this project has not opened within 12 months of the date of this letter. Failure to do so may invalidate R&D approval.
- Inform NISCHR PCU and the UHB R&D Office if any external or additional funding is awarded for this project in the future
- Submit any substantial amendments relating to the study to NISCHR PCU in order that they can be reviewed and approved prior to implementation
- Ensure NISCHR PCU is notified of the study's closure
- Ensure that the study is conducted in accordance with all relevant policies, procedures and legislation
- Provide information on the project to the UHB R&D Office as requested from time to time, to include participant recruitment figures

Yours sincerely,



Professor Christopher Fegan
R&D Director / Chair of the Cardiff and Vale Research Review Service (CaRRS)

CC R&D Lead Dr Neil Roberts
Chief Investigator, Sarah Kriakous, University of Bangor
Sponsor: Hefin Francis, University of Bangor
Academic Supervisor: Dr Katie Elliott, North Wales Forensic Psychiatric Service
Academic Supervisor: Dr Robin Owen, North Wales Forensic Psychiatric Service

18 October, 2014

Dear Ms. Kriakous

I am pleased to confirm our agreement for you to carry out research as part of your Clinical Psychology Doctorate at Llanarth Court Hospital for the period of October 2014 to September 2015.

Our expectations:

1. You will provide original documentation of your qualifications, e.g. Degree certificate, together with a full CV and the name of an academic referee. These should be provided to Sally Leake, Human Resources Administrator.
2. You will be expected to perform and observe any such instructions as may reasonably be communicated to you by the Hospital for your safety and participants' safety. You will act in a responsible and professional manner whilst on Placement.
3. Your named Contact will be Dr Gemma O'Brien. You need to liaise with your Contact regarding access to participants, information or if you wish to attend the Hospital.
4. You may have access to confidential information about the Company and its employees. You must not disclose any information of a confidential nature relating to the business carried on by the Company and its employees or patients, either during the period of your Placement or afterwards. Any failure to do so will result in the Placement being terminated.
5. You agree to return any confidential information and not to retain copies on the ending of your Placement.
6. You may have access to personal sensitive data about employees of the Company. You must not disclose any such information without authorisation from your Contact. You must comply with the Company's Data Protection policy, failure to do so will result in the Placement being termination.
7. Whilst it is understood you will conducting research during your Placement, you agree that participant personal data (including but not limited to names) by which employees of the Company can be identified and/or Company confidential information must not be included in any records, reports or documents you create and/or keep. Any records, reports or documents that are to be disclosed or used outside of the Company must first be authorised in writing by your Contact.
8. You understand that this is a Placement for the purpose of research for your Clinical Psychology Doctorate. You are not an employee of the Company.

The Company's duties

- 9. You will have use of the staff facilities whilst at the Hospital, subject to any restrictions in place. You have no entitlement to any remuneration or pay during the period of this Placement or when the Placement comes to an end.

- 10. If you wish to attend the Hospital, you will be given an induction and any other training where relevant and appropriate. Any policies relevant to your Placement will be explained to you by your Contact and you be expected to comply with these, in particular including but not limited to the Company's Information Governance Policy, Computer Use and Security Policy and Diversity Policy. Failure to do so will result in your Placement being terminated.

- 11. The Company may terminate the Placement at any time if, in its opinion, you have behaved unacceptably, not acted in accordance with this agreement or acted in a manner that puts patients' or employees' safety at risk and/or could cause damage to the Company and/or bring the Company into disrepute. If appropriate, your Contact may discuss the matter with you first and you may be given the opportunity to respond to any complaint before a decision is made.

The above is agreed by you and the Hospital for the purpose of carrying out your Placement. From time to time they may be varied by the Company without notice. The arrangements are not intended to give rise to an employment relationship.

Academic referee: Dr. Carolien Lamers (Clinical Lecturer, North Wales Clinical Psychology Programme)

Signed:



Name: Sarah Angela Kriakous

Signed.....

Signed..... On behalf of the Hospital

Date.....

Section Three
Literature Review

**The Effectiveness of Mindfulness Based Stress Reduction on Psychological Functioning
in Healthcare Professionals**

Sarah Angela Kriakous¹, Dr. Katie Ann Elliott² & Dr. Robin Owen²

¹North Wales Clinical Psychology Programme

School of Psychology

Bangor University

43 College Road

Bangor

Gwynedd LL57 2DG

²North Wales Forensic Psychiatric Service

Ty Llywelyn Medium Secure Unit

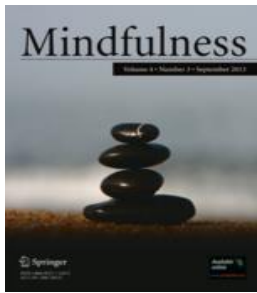
Ysbyty Bryn y Neuadd

Llanfairfechan

Conwy LL33 0HH

Corresponding Author: Sarah Angela Kriakous, North Wales Clinical Psychology Programme,
School of Psychology, Bangor University, 43 College Road, Bangor, Gwynedd, LL57 2DG
(email: psp0cd@bangor.ac.uk)

Mindfulness



Editor-in-Chief: Nirbhay N. Singh
ISSN: 1868-8527 (print version)
ISSN: 1868-8535 (electronic version)
Journal no. 12671

Instructions for Authors

EDITORIAL PROCEDURE

Double-blind peer review

This journal follows a double-blind reviewing procedure. Authors are therefore requested to submit:

- A blinded manuscript without any author names and affiliations in the text or on the title page. Self-identifying citations and references in the article text should be avoided.
- A separate title page, containing title, all author names, affiliations, and the contact information of the corresponding author. Any acknowledgements, disclosures, or funding information should also be included on this page.

MANUSCRIPT SUBMISSION

Manuscript Submission

Submission of a manuscript implies: that the work described has not been published before; that it is not under consideration for publication anywhere else; that its publication has been approved by all co-authors, if any, as well as by the responsible authorities – tacitly or explicitly – at the institute where the work has been carried out. The publisher will not be held legally responsible should there be any claims for compensation.

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Authors wishing to include figures, tables, or text passages that have already been published elsewhere are required to obtain permission from the copyright owner(s) for both the print and online format and to include evidence that such permission has been granted when submitting their papers. Any material received without such evidence will be assumed to originate from the authors.

Online Submission

Please follow the hyperlink “Submit online” on the right and upload all of your manuscript files following the instructions given on the screen.

TITLE PAGE

Title Page

The title page should include:

- The name(s) of the author(s)
- A concise and informative title
- The affiliation(s) and address(es) of the author(s)
- The e-mail address, telephone and fax numbers of the corresponding author

Abstract

Please provide an abstract of 150 to 250 words. The abstract should not contain any undefined abbreviations or unspecified references.

Keywords

Please provide 4 to 6 keywords which can be used for indexing purposes.

TEXT

Text Formatting

Manuscripts should be submitted in Word.

- Use a normal, plain font (e.g., 10-point Times Roman) for text.
- Use italics for emphasis.
- Use the automatic page numbering function to number the pages.
- Do not use field functions.
- Use tab stops or other commands for indents, not the space bar.
- Use the table function, not spreadsheets, to make tables.
- Use the equation editor or MathType for equations.
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Abstract

Introduction: Burnout and occupational stress are high amongst healthcare professionals (HCPs). Mindfulness Based Stress Reduction (MBSR) has been found to improve psychological health outcomes in HCPs. However, there have been no reviews that have focused solely on quantitative studies published post 2007 or, that have investigated the effectiveness of MBSR on psychological functioning in a variety of HCPs.

Objective: This literature review explored the effectiveness of MBSR on psychological functioning in a variety of HCPs.

Methods: Three electronic databases were searched. Studies included were quantitative, had a pre-post design, employed MBSR programmes, participants were healthcare students/and or professionals, used standardised measures of psychological functioning and were published between January 2008 and January 2015. A narrative synthesis approach was employed to summarise and explain the findings of the studies included in this literature review.

Findings: The collated literature suggested that MBSR was effective in reducing anxiety, depression, trait anger, rumination, stress and increasing mindfulness and self-compassion. However, MBSR did not appear to be as effective in reducing burnout and improving resilience. Abbreviated MBSR programmes were just as effective as the standard eight week MBSR programmes.

Conclusions: MBSR is an effective intervention in improving psychological functioning in HCPs, however, better quality studies with more robust study designs, which have bigger samples sizes, heterogeneous samples and active comparison interventions are recommended.

Introduction

Stress and Burnout in Healthcare Professionals (HCPs)

HCPs are exposed to emotionally challenging and stressful situations in the workplace, especially in the current climate where there is an increasing demand for clinical productivity along with other work-related pressures (Aiken, Clark, Sloane, Sochalski & Silber, 2002; Schinler et al., 2006). Stress and work-related burnout is common amongst different HCPs, including nurses, physicians and psychologists (Rupert & Morgan, 2005; Shanafelt, Sloan, & Habermann, 2003; Vahey, Aiken, Sloane, Clarke & Vargas, 2004). Stress can be defined as a relationship between an individual and their environment, which the individual appraises as potentially threatening to their well-being (Lazarus & Folkman, 1984).

In relation to burnout, there does not appear to be a universally agreed definition (Farber, 1983), however, burnout can be viewed as a process rather than a fixed state (Schulz, Greenley & Brown, 1995) and can be defined as emotional, mental and physical exhaustion caused by excessive and prolonged stress. In relation to employment, Maslach, Jackson and Leiter (1996) developed a model of burnout and proposed that burnout is a work-related syndrome which included three components: 1) emotional exhaustion; 2) depersonalization and 3) diminished feelings of personal accomplishment. Emotional exhaustion is the main symptom of burnout and refers to the reduced ability to experience emotions relating to work. Depersonalization is the process which involves individuals distancing themselves from clients by disregarding the characteristics that make them unique. Personal accomplishment relates to the feeling of achievement from working with individuals (Maslach et al., 1996; Maslach, Schaufeli & Leiter, 2001).

Staff stress and burnout in HCPs has been associated with physical and mental health problems, including anxiety, depression, diabetes, fatigue, heart disease, hypertension, insomnia and obesity (Bryant, Fairbrother & Fenton., 2009; Miller, Stiff & Ellis, 1988; Spickard, Gabbe & Christensen, 2002; Weinberg & Creed, 2000). Burnout amongst HCPs has also been associated with decreased job satisfaction (Dougherty et al., 2009) and negative service user outcomes, including reduced service user satisfaction and increased work errors (Fahrenkopf et al., 2008; Vahey et al., 2004; Williams, Manwell, Konrad & Linzwer 2007).

Mindfulness, Occupational Stress and Burnout

In order to address occupational stress and burnout amongst HCPs, there is a growing body of evidence to suggest that mindfulness based interventions (MBIs) can help decrease stress and burnout in HCPs, increase job satisfaction and improve service user outcomes (Escuriex & Labbe, 2011; Irving, Dobkin & Park, 2009; Shanafelt, 2009). There are varying definitions of mindfulness, however, it is more commonly and operationally defined as the quality of awareness that occurs through intentionally focusing on present moment experiences in an accepting and non-judgemental manner (Kabat-Zinn, 1994). Mindfulness has become an increasingly popular intervention worldwide, it has an extensive and well-established evidence base investigating the efficacy of mindfulness based interventions (MBIs) to improve psychological functioning and well-being in clinical and non-clinical populations (Gu, Strauss, Bond & Cavanagh, 2015).

There are numerous MBIs that are currently being employed with clinical and non-clinical populations, however, Mindfulness Based Stress Reduction (MBSR; Kabat-Zinn, 1982) is one of the most extensively used and evaluated MBIs. MBSR was originally designed for patients with chronic medical conditions to help reduce stress and improve their quality of

life via focused attention, meditation, cognitive restructuring and adaptive learning techniques (Kabat-Zinn, 1990). The standard MBSR programme is an eight-week group intervention, where participants meet once weekly for two to three hours, undertake a six hour silent retreat and are encouraged to complete 45 minutes of daily mindfulness practice to aid skill generalisation (Virgili, 2013). Mindfulness is taught via formal (e.g., body scan, sitting meditation, mindful walking, and Hatha Yoga) and informal practices (everyday activities, e.g., brushing teeth and washing dishes).

There are numerous theoretical models to explain the potential mechanisms of mindfulness and MBIs. A similarity of many of the models is that they postulate that mindfulness causes a positive shift in perspective and an ability to objectively view one's life experiences, this is often referred to as 'decentering' (Baer, 2003; Brown, Ryan & Creswell., 2007; Shapiro, Carlson, Astin & Freedman, 2006). Shapiro et al. (2006) highlighted that mindfulness involves three interwoven mechanisms that form part of a single cyclical process: 1) intention (on purpose) 2) attention (paying attention) and 3) attitude (with openness and non-judgement). Figure 1 illustrates these three mechanisms of mindfulness as a single cyclical process. These mechanisms (intention, attention and attitude) then lead to the aforementioned shift in perspective, Shapiro et al. (2006) refers to this process as 'reperceiving'.

Insert Figure 1

Reperceiving facilitates an individual's ability to observe their thoughts and feelings with greater clarity. Reperceiving is classified as a meta-mechanism that then leads to an additional four mechanisms: 1) self-regulation; 2) values clarification; 3) cognitive, emotional and behavioural flexibility and 4) exposure to strong emotions with objectivity. These

additional mechanisms result in changes which then produce positive outcomes (e.g., adaptive coping and reduction in stress).

Kabat-Zinn (2013) suggested that individuals can react to stress in a habitually unhealthy way. For example, an individual worrying they may have a fatal disease may become stressful and disabling, despite it not being true; this, in turn can prevent individuals from seeing things clearly, from solving problems creatively, communicating their emotions effectively to others and to understanding what is happening inside themselves. These feelings and behaviours can be referred to as a 'habitual or automatic stress reaction' (pg. 335¹). Kabat-Zinn highlighted that mindfulness can help individuals employ a 'mindfulness-mediated stress response' (pg.335²). This process enables individuals to engage in the process of re-perceiving, this then reduces the power of the stress reaction, and consequently, individuals can employ more adaptive, effective coping strategies, which in turn reduces stress.

The Effectiveness of MBSR

Two reviews conducted with a population of healthy adults concluded that, despite studies being flawed with methodological limitations, MBSR was efficacious in reducing both anxiety and stress and increasing self-compassion (Chiesa & Serretti, 2009; Sharma & Rush., 2014). Similarly, a meta-analysis concluded that brief versions (e.g., 4-6 weeks) of MBSR were equally as effective in reducing psychological distress in working adults compared with the MBSR originally designed for clinical populations (Virgili, 2013). Numerous reviews have investigated the effectiveness of MBIs on psychological outcomes in HCPs and they concluded

^{1,2} Kabat-Zinn, J. (2013). *Full Catastrophe Living*. Croydon, England: CPI Group (UK) Ltd.

that MBIs were effective in reducing anxiety, burnout, stress and rumination and increasing mindfulness and self-compassion in HCPs (Escuriex & Labbe, 2011; Irving et al., 2009; Morgan, Simpson & Smith, 2014; Smith, 2014).

However, the MBIs included in the reviews were not all based on MBSR, (Escuriex & Labbe, 2011), there was a mixture of qualitative and quantitative studies (Escuriex & Labbe, 2011; Irving et al., 2009; Morgan et al., 2014; Smith, 2014) and the samples included specific groups of HCPs, e.g., nurses (Smith, 2014). The variability of studies included in the aforementioned reviews suggested that there was a need for reviews to focus specifically on the effectiveness of MBSR on psychological outcomes in different groups of HCPs.

Scope and Rationale for this Literature Review

Irving et al. (2009) undertook a review of empirical studies examining the potential benefits of MBSR for improving well-being and coping with stress in HCPs. From the ten quantitative studies reviewed, Irving et al. (2009) found that MBSR consistently reduced anxiety, emotional exhaustion and stress whilst also increasing positive affect. However, the review only included published studies until 2007, many of the quantitative studies had methodological shortcomings such as small sample sizes (Beddoe & Murphy, 2004; Cohen-Katz, Wiley, Capuano, Baker & Shapiro, 2005; MacKenzie, Poulin & Seidman-Carlson, 2006; Shapiro, Astin, Bishop & Cordova 2005; Shapiro, Brown & Biegel, 2007; Young, Bruce, Turner & Linden, 2001) and only one study included an additional treatment comparison (Jain et al., 2007).

Since 2007 additional studies have been published in this area, therefore, the aim of this literature review was to examine these additional quantitative studies and investigate the effectiveness of MBSR on psychological functioning in a variety of HCPs. Psychological

functioning can be defined as an individual's ability to achieve their goals internal and external to themselves, it also includes the individual's mood, emotions, mental health and behaviour (Preedy & Watson, 2010).

Furthermore, many studies included in Irving et al's. (2009) review did not account for additional factors which could have influenced treatment outcomes, such as treatment duration, instructor experience, treatment integrity, level of mindfulness home practice and participant incentives. Therefore, an additional aim of this literature review was to explore the relationship between these aforementioned factors and treatment outcomes in MBSR studies between January 2008 and January 2015.

Method

Inclusion and Exclusion Criteria

Types of Studies

Studies were included in the literature review if they had a quantitative methodology, if they employed a pre-post design and if they included the use of control groups, waiting-list controls or active treatment comparisons. Studies were excluded from the literature review if they only had a qualitative methodology. Studies included were also published in the English language and peer reviewed publications.

Types of Participants

Studies included had samples of healthcare students and HCPs working within an academic and clinical capacity. Professional disciplines included counselling, nursing, different specialisms of medicine, mental health, occupational therapy, psychology, psychiatry,

social work and support staff working within a healthcare setting. Studies were excluded if the sample were carers for friends and/or family members.

Types of Interventions

Studies included the use of MBSR and any modified programmes derived directly from MBSR, (e.g., in relation to programme duration). Studies were excluded if the MBSR programme included additional psycho-educational components, (e.g., mindful communication); additional therapeutic concepts, (e.g., Mindfulness Based Cognitive Therapy (MBCT; Kabat-Zinn, 1982) and Acceptance and Commitment Therapy (ACT; Hayes & Wilson, 1994); and additional physical exercises, (e.g., Qigong). Studies were also excluded if an audio CD of guided mindfulness practice was used solely as the mode of intervention. No restrictions were applied for the length of MBSR interventions or the use of adapted MBSR interventions.

Types of Outcome Measures

Outcome measures were to be administered at baseline (pre-treatment) and follow-up (post-treatment) and the study used at least one standardised measure for an area of psychological functioning, including mood, burnout, stress, resilience, self-compassion, rumination, mental well-being, psychological distress and mindfulness. Outcome measures and subscales were excluded if they measured empathy towards others, physical health and spirituality. Studies included were also published in the English language and peer reviewed publications.

Quality Assessment of Research Studies

The Quality Assessment Tool for Quantitative Studies (National Collaborating Centre for Methods and Tools, 2008) was developed by the Effective Public Health Practice Project (EPHPP, 1998). The tool was used by the main author to assess the quality of the research studies included in this review and to make recommendations from the study findings. The tool has been found to have content validity and test-retest reliability (Time 1 $r=0.74$; Time 2 $r=0.61$) (Thomas, Ciliska, Dobbins & Micucci, 2004).

The tool produced an overall methodological rating of 'weak', 'moderate' or 'strong' for each study and this was based on quality ratings provided for six components: 1) selection-bias; 2) study design; 3) confounders; 4) blinding; 5) data collection methods and 6) withdrawal and drop outs. Two final components, intervention integrity and analysis, were also incorporated into the tool but a score was not provided for these sections.

A dictionary specific to the Quality Assessment Tool for Quantitative Studies was used to assist the main author and to maintain standardised results. Any queries relating to the quality ratings were discussed with the research team at Bangor University. All studies were included in the literature review regardless of their quality rating, because one of the aims of this literature review was to examine the quality and the robustness of the studies.

Search Strategy

Three electronic databases (Psych Info, PubMed and Web of Science) were searched from January 2008 until January 2015. Search terms related to the intervention (mindfulness) and the participant group (healthcare professionals/health care professionals) were used for all three databases. The filters peer reviewed studies were used where possible.

Initially duplicate studies from the three different databases searches were identified and removed accordingly. Titles and abstracts of potential eligible studies from the three database searches were then identified and reviewed. Studies that did not meet the minimum inclusion criteria were eliminated. Remaining relevant citations were obtained in full text and assessed in relation to the inclusion/exclusion criteria, thus identifying a final list of studies for inclusion in the literature review.

Reference lists and the 'cite' button on Google Scholar were used for the final list of studies to search for additional studies. Other resources included in the search strategy were the Cochrane Library, the Mindfulness Journal and the American Mindfulness Research Association's Mindfulness Research Monthly Newsletter. The PRISMA diagram (Moher, Liberati, Tetzlaff & Altman, 2009) detailing different stages of the search strategy for this review are illustrated in Figure 2.

Insert Figure 2

Results

Eighteen studies were included in the review that investigated the effectiveness of MBSR on psychological functioning in a variety of healthcare students and/or professionals. The term 'MBSR' will be used throughout this review to refer to traditional MBSR programmes and other mindfulness interventions that were directly adapted from MBSR. This section will now review the salient findings of the studies in relation to the different aspects of psychological functioning in HCPs. Due to the variation in the outcome measures employed

throughout the studies, the measures have not been detailed in the main body of the literature review. A summary of the studies, including the outcome measures used, are presented in Table 1.

Insert Table 1

Anxiety

From synthesizing the significant findings from these studies, MBSR interventions were found to be effective in reducing scores of anxiety post-intervention compared to pre-intervention in nursing students (Kang, Choi, & Ryu, 2009; Song & Lindquist, 2015), nurses (Ando, Natsume, Kukihara, Shibata & Ito, 2011; Pipe, Bortz, & Duek, 2009) and a variety of HCPs including doctors, mental health professionals and support staff (Manotas, Segura, Eraso, Oggins & McGovern, 2014) when compared to controls.

In relation to the studies that completed a follow-up, reduced anxiety scores were sustained at three-week follow-up in graduate healthcare students compared to controls (Barbosa et al., 2013) and at a nine-month follow-up in primary care clinicians (Fortney, Luhterhand, Zakletskaia, Zgierska & Rakel., 2013). One study found no significant changes for trait anxiety, but a significant change in state anxiety was observed in a group of resident intern psychiatrists and clinical psychologists post-intervention compared to pre-intervention (Vega et al., 2014).

In summary, eight studies that measured anxiety with the exception of one (Vega et al., 2014), all found significant reductions in anxiety post intervention compared to pre-intervention and these changes were sustained until nine-month follow-up (Fortney et al., 2013).

Depression

MBSR was found to be effective in significantly reducing scores of depression pre-intervention compared to post-intervention in nursing students (Song & Lindquist, 2015), nurses (Ando et al., 2011), intern psychiatrists and clinical psychologists (Vega et al., 2014) and a variety of other HCPs including doctors, mental HCPs and support staff (Manotas et al., 2014). Improvements in depression were also maintained at nine-month follow-up in primary care clinicians (Fortney et al., 2013).

Two further studies found reduced depression scores in a group of nursing students (Kang et al., 2009) and nurses (Pipe et al., 2009) post-intervention compared to pre-intervention. However, no significant differences were found between participants that completed the mindfulness groups compared with participants that did not receive any intervention (Kang et al., 2009) or participants that completed a leadership course (Pipe et al., 2009). One study found no significant improvements for depression in a variety of HCPs including social workers, physicians and psychologists post-intervention compared to pre-intervention and when compared to the control group (Moody et al., 2013).

In summary, seven studies found significant reductions in depression post-intervention compared with pre-intervention, and improvements were maintained at nine-month follow-up (Fortney et al., 2013). However, three studies did not find statistically significant reductions in depression when comparing the mindfulness groups to control groups (Kang et al., 2009; Moody et al., 2013) and a treatment comparison (e.g. leadership group) (Pipe et al., 2009).

Anger

Only one study explored the effects of MBSR on anger in HCPs. Vega et al. (2014) found a significant improvement in the anger reaction subscale of trait anger in a group of

residential intern psychiatrists and clinical psychologists post-intervention compared with pre-treatment and when compared to a control group. However, no significant differences were found between groups for any of the state anger subscales and the angry temperament subscale of trait anger.

Psychological Well-being

For the purpose of this literature review outcome measures investigating psychological distress and mental well-being were included under the category of psychological well-being. From synthesising all the significant findings from the studies, MBSR interventions were found to be effective in reducing psychological distress in a variety of HCPs including nurses, doctors and psychologists (Bazarko, Cate, Azocar & Kreitzer, 2013; Martin-Asuero & Gacia-Banda., 2010). Improvements were also maintained at three (Martin-Asuero & Gacia-Banda., 2010) and four-month follow-up (Bazarko et al., 2013). A significant reduction in rumination was also observed in HCPs, and decreases in rumination also had a significant relationship with a reduction in psychological distress (Martin-Asuero & Gacia-Banda, 2010).

When MBSR groups were compared to control groups, a significant improvement in psychological distress was found in nurses (Pipe et al., 2009), other HCPs including doctors, mental health professionals and support staff (Manotas et al., 2014) and in academic HCPs (Geary & Rosenthal, 2011). Improvements had also been maintained at one-year follow-up (Geary & Rosenthal, 2011). Symptom intensity had also significantly improved post-intervention compared to pre-intervention in the MBSR groups (Pipe et al., 2009).

In relation to mental well-being, MBSR was found to significantly improve scores in physicians and other healthcare providers post-intervention compared with pre-intervention (Goodman & Schorling, 2012). When compared to controls, MBSR had significantly improved

mental well-being in academic HCPs (Geary & Rosenthal, 2011), significantly reduced mental distress and significantly improved subjective well-being in medical and psychology students (deVibe et al., 2013). Improvements for mental well-being were maintained at one-year follow-up (Geary & Rosenthal, 2011) and when gender was investigated, women had significant improvements in mental distress and subjective well-being when compared to men (deVibe et al., 2013).

In summary, all studies found significant reductions in psychological distress and significant improvements in mental well-being post-intervention compared with pre-intervention. Improvements in symptom intensity and a reduction in rumination (Pipe et al., 2009) were also observed (Martin-Asuero & Gacia-Banda, 2010). Improvements were maintained for up to one-year follow-up for different aspects of psychological well-being (Geary & Rosenthal, 2011).

Stress

In relation to studies that had a pre-post design, MBSR was found to significantly reduce stress scores post-intervention compared with pre-intervention in a variety of HCPs (e.g. psychiatric nurses, social workers, mental health professionals) who worked in an inpatient psychiatric unit (Brady, O'Connor, Burgermeister & Hanson, 2012). A further study found that perceived stress decreased in HCPs (e.g. doctors, nurses, psychologists) working in a hospital or in a primary care centre, however, improvements were not statistically significant post-intervention compared with pre-intervention (Martin-Asuero & Gacia-Banda, 2010).

When compared to controls, MBSR was found to significantly reduce stress in nursing students (Kang et al; 2009; Song & Lindquist, 2015) and a variety of HCPs in other healthcare settings post-intervention from pre-intervention (e.g. doctors, nurses, mental health

professionals, support staff) (Manotas et al., 2014). However, two studies found no statistically significant improvements between the MBSR group and control group post-intervention compared to pre-intervention in medical and psychology students, (deVibe et al., 2013) and in a group of paediatric oncology staff members (Moody et al., 2013). Interestingly, MBSR resulted in significant positive improvements for female students compared to males (deVibe et al., 2013).

A number of studies had also measured changes in stress for different follow-up periods. Improvements in stress had been maintained at one-month follow-up for college students going into the helping professions (Newsome, Waldo & Gruszka, 2012), two months for HCPs that work in an adolescent psychiatric unit (Hallman, O'Connor, Hasenau & Brady, 2014), four months for nurses (Bazarko et al., 2013), nine months for primary care clinicians (Fortney et al., 2013) and a year for academic healthcare employees (Geary & Rosenthal, 2011).

In summary, ten studies found significant reductions in stress post-intervention compared with pre-intervention, which were maintained up to one-year follow-up (Geary & Rosenthal, 2011). However, three studies did not find statistically significant reductions in stress post-intervention compared with pre-intervention (Martin-Asuero & Gacia-Banda, 2010) and when MBSR groups were compared to controls (deVibe et al., 2013; Moody et al., 2013).

Burnout

MBSR studies investigating burnout produced rather mixed findings compared to other aspects of psychological functioning. Significant improvements were found for emotional exhaustion, depersonalisation and personal accomplishment post-intervention compared with pre-intervention for HCPs (nurses, physicians, social workers, psychologists) (Goodman & Schorling, 2012). Improvements in burnout were maintained in nurses at four-month follow-

up (Bazarko et al., 2013) and for primary care clinicians at nine-month follow-up (Fortney et al., 2013).

Four MBSR studies, however, found no significant improvements in burnout in medical and psychology students (deVibe et al., 2013), in graduate healthcare students (Barbosa et al., 2013) and in paediatric oncology staff members (Moody et al., 2013). One study found some reductions in burnout in HCPs working within an inpatient psychiatric unit, however, improvements were not statistically significant post-intervention compared to pre-intervention (Brady et al., 2012).

These non-significant findings could be explained by elevated levels of pre-intervention burnout scores in Moody et al's (2013) study when compared with other studies that demonstrated positive effects that employed a similar design with other HCPs (Cohen-Katz et al., 2005; Shapiro et al., 2005). It can be suggested that if Moody et al's (2013) sample were significantly more burned out and stressed, than the MBSR programme may be less likely to improve burnout symptoms. In addition, some participants in Moody et al's (2013) study highlighted that attending the MBSR course resulted in additional stress because it was an additional task they had to complete within their working day.

Furthermore, inconsistent findings for burnout could be explained by research that has suggested that burnout was a distinct construct to mental health difficulties such as anxiety, depression and stress (Awa, Plaumann, & Walter, 2010; Maslach et al., 2001). Burnout appears to also be related to external factors (Morse et al., 2012), therefore, it may take longer to ameliorate compared to other constructs, such as anxiety, depression and stress, which may relate to internal factors which MBSR is more effective in improving.

Resilience

Two MBSR studies measured resilience in HCPs and both studies found no statistically significant differences in resilience post-treatment compared to pre-treatment in first-year medical students (Erogul, Singer, McIntyre & Stefanov, 2014) and in primary care clinicians (Fortney et al., 2014). However, the non-significant results relating to resilience need to be treated with caution because only two MBSR studies examined this aspect of psychological functioning. Despite the insignificant findings, interestingly, resilience was significantly correlated with self-compassion and perceived stress (Erogul et al., 2014). It can be suggested that, resilience is a trait that develops over time, therefore, it may be less amenable to change following an MBSR intervention compared to emotional states such as anxiety, depression and stress.

Self-compassion

Several MBSR studies found that self-compassion significantly increased post-intervention compared with pre-intervention in college students that were entering the helping professionals (Newsome et al., 2012), in first-year medical students (Erogul et al., 2014) and with nurses (Bazarko et al., 2013). Improvements in self-compassion were also maintained at one-month (Bazarko et al., 2013) and at six-month follow-up (Erogul et al. 2014).

Mindfulness

Of the eighteen studies included in the literature review only five studies investigated changes in mindfulness post-treatment compared to pre-treatment. Significant increases in mindfulness were observed in college students going into the helping profession (Newsome et al., 2012) and in HCPs that worked within a psychiatric inpatient unit (Brady et al., 2012) and

adolescent psychiatric unit (Hallman et al., 2014). When compared to controls, mindfulness also significantly increased in nursing students (Song & Lindquist, 2015) and resident intern psychiatrists and clinical psychologists (Vega et al., 2014). Levels of mindfulness significantly increased at one-month follow-up for college students going into the helping profession (Newsome et al., 2012) and continued to increase at two-month follow-up for HCPs employed in an adolescent psychiatric unit (Hallman et al., 2014).

Two studies investigated the five different facets of mindfulness, which included: 1) observing; 2) describing; 3) acting with awareness; 4) non-judging of inner experiences and 5) non-reacting to inner experiences. When compared to controls, Manotas et al., (2014) found significant increases for the mindfulness facets of observing and non-judging and overall mindfulness in various HCPs (e.g., doctors, nurses, mental health professionals and support staff) post-intervention compared to pre-intervention. However, no statistically significant effects were found for the mindfulness facets of describing, acting with awareness or non-reacting. Conversely, deVibe et al. (2013) only found a significant increase in the mindfulness facet of non-reacting post-intervention compared to pre-intervention. Interestingly, there was a significant increase in the mindfulness facet of non-judging in female students compared to males (deVibe et al., 2013).

In summary, five studies that measured overall mindfulness found significant increases in mindfulness post-intervention compared with pre-intervention and improvements were maintained at two-month follow-up (Hallman et al., 2014). However, two studies measuring more specific facets of mindfulness solely found significant increases for observing, non-judging (Manotas et al., 2014) and non-reacting (deVibe et al., 2013).

The variation in the findings for different facets of mindfulness could be attributed to participants developing some aspects of mindfulness skills that are associated with anxiety and

stress (e.g., observing, non-judging and non-reacting) during completion of the MBSR programme. However, other facets of mindfulness may take longer to develop (e.g., acting with awareness) and may not be fully covered by the MBSR programme (e.g., describing) (Manotas et al., 2014).

Discussion

Critique and Implications for Future Research

From synthesising the results from the eighteen studies for the different clinical outcomes that related to psychological functioning, there was some variability in the effectiveness of MBSR on psychological functioning within and between the studies in particular for anger, burnout, depression, resilience and mindfulness. The next section of the literature review will evaluate the quality and robustness of the research studies included in this review, along with identifying and exploring the different factors that may explain the variability in the research findings. Recommendations for future research will also be considered.

Quality Assessment of Studies

The Quality Assessment Tool for Quantitative Studies was employed to review the quality and robustness of the eighteen research studies included in this review. Results indicated that nine studies had a ‘weak’ global quality rating, eight studies had a ‘moderate’ global quality rating and one study had a ‘strong’ global quality rating. The quality ratings for the different components of the studies are presented in Table 2.

*Insert Table 2**Study Designs*

Of the three randomised controlled-trials (RCTs) that were included in this review, only one study had a comparative treatment group which was a leadership and stress course (Pipe et al., 2009) and another referred to using a randomised controlled design but lacked blinding procedures (Moody et al., 2013). The three RCTs also had methodological limitations relating to small sample sizes, lack of follow-up (Moody et al., 2013; Pipe et al., 2009) and possible contamination between experimental and control groups (deVibe et al., 2013).

In relation to the seven studies that employed a pre-post design and the eight studies that employed a controlled clinical trial (CCT) design, there were methodological issues relating to small sample sizes. Excluding deVibe's (2013) RCT, only two studies had a participant number greater than a hundred (Geary & Rosenthal, 2011; Vega et al., 2013). Additional methodological limitations included a lack of blinding, lack of randomisation, and confounding variables were not always controlled for in the study designs via stratification or matching.

Despite the study design being rated 'strong' for ten of the studies, the global quality rating for these studies were 'weak' or 'moderate', with the exception of one RCT that received a 'strong' global quality rating (deVibe et al., 2013). In relation to the analyses most

of the statistical methods appeared appropriate for the study designs, however, the majority of studies did not appear to include intention-to-treat (ITT) analysis³.

It is recommended that more RCTs with bigger sample sizes are completed to investigate the effectiveness of MBSR for HCPs when compared to other psychological interventions that may result in improvements in psychological functioning. In addition, studies are also recommended to include ITT analyses so that risk of attrition bias can be minimised and that treatment effectiveness studies reflect the noncompliance and treatment changes that occur in practice.

Study Populations and Settings

Most of the studies included in this review had an overrepresentation of females (range 60-100%) in their overall sample, for some studies this was a typical representation of their workforce. However, some researchers noted this could limit the generalisation of their findings to male populations (Bazarko et al., 2013; Moody et al., 2013; Song & Lindquist, 2015).

DeVibe et al. (2013) found that women had significant improvements in mental distress and subjective well-being when compared to men, this suggests that MBSR may be more effective for women than some men for particular psychological outcomes (e.g. mental distress and subjective well-being). However, further research is required to investigate gender differences in relation to MBSR effects for different psychological outcomes (e.g. perceived stress and burnout).

³ Intention to treat analysis refers to analyses based on the initial treatment assignment and not on the actual treatment received.

In relation to ethnicity, a large number of research studies had not reported the ethnicity of participants. However, in the few studies that ethnicity was reported samples were overrepresented with Caucasian participants (Barbosa et al., 2013; Fortney et al., 2013; Geary & Rosenthal, 2011). Further research, is therefore needed, with more heterogeneous samples so that findings are more generalizable to other populations.

For the purpose of this review both healthcare students and HCPs employed in academic settings were included in the study sample. Despite inadequate reporting in the research articles, it can be suggested that some students working in clinical settings or HCPs employed and/or studying in academic settings may have had less contact with service users than HCPs working in clinics or hospitals. Further research is required to explore whether level of client contact influences pre and post-intervention levels of psychological functioning.

A further limitation of the studies included in this review is that they had small sample sizes and high levels of selection bias, as participants had often self-selected to participate in the research. It could be suggested that the participants may be more motivated to participate in the research and may be primed to focus on psychological issues, this, in turn could have influenced the results of studies (deVibe et al, 2013).

Variability in Outcomes Measures

Despite some research studies employing robust assessment measures, there was a large variability in the outcome measures being used between studies to investigate different aspects of psychological functioning in HCPs, in particular anxiety, depression, psychological well-being, stress and mindfulness. Such variability could lead to ambiguity and difficulty comparing findings between studies that investigate the same psychological outcomes.

A further limitation of some of the studies included in this review was that the reliability and validity of outcome measures were unclear or not described in the research articles (Ando et al., 2011; Eroglu et al., 2014; Geary & Rosenthal, 2011). Further research may benefit from more accurate reporting of the reliability and validity of outcome measures and employing consistent assessments to measure outcomes of psychological functioning (Escuriex & Labbe, 2011; Smith, 2014), so that findings between studies can be compared more reliably and more defensible conclusions made.

Additional Factors and Treatment Outcomes

MBSR Programme Duration

Some of the studies employed the traditional eight-week MBSR programme, however, other studies utilized abbreviated versions of MBSR programmes. The modalities of the MBSR programmes included group sessions and/or retreats with the exception of one study that employed an MBSR programme which involved two all day retreats and then six ninety minute group teleconference calls (Bazarko et al., 2013).

Some of the studies that delivered the traditional eight-week MBSR programme (Geary & Rosenthal, 2011; Goodman & Schorling, 2012; Newsome et al., 2012; Song & Lindquist, 2015) were effective in improving psychological functioning in HCPs, however, other studies that delivered the traditional MBSR programmes produced mixed findings (Barbosa et al., 2013; Martin-Asuero & Gacia-Banda, 2010; Moody et al., 2013; Vega et al., 2013).

Similarly, studies that delivered an adapted MBSR programme ranging from four to seven weeks produced reductions in anxiety, depression, mental distress and stress and improvements in mindfulness and well-being (Brady et al., 2012; deVibe et al., 2013; Kang et al., 2009; Manotas et al., 2014; Pipe et al., 2009). However, these studies also produced non-

significant results in relation to burnout, depression and stress (Brady et al., 2012; deVibe et al., 2013; Kang et al., 2009).

Furthermore, studies that delivered an adapted MBSR programme, but provided the programme content within three weeks were effective in reducing anxiety, depression, stress and improving burnout and mindfulness skills in a range of HCPs (Ando et al., 2011; Fortney et al., 2014; Hallman et al., 2014). In addition, improvements in mindfulness were maintained at two-month follow-up (Hallman et al., 2014) and improvements in anxiety, depression, burnout and stress were maintained at nine-month follow-up (Fortney et al., 2014).

Findings from this review suggested that, in line with previous research (MacKenzie et al., 2006; Shapiro et al., 2005; Virgili, 2013) abbreviated MBSR programmes (e.g. 4-7 weeks) were just as effective as traditional eight-week MBSR programmes. However, this review also found that MBSR programmes that were abbreviated and delivered within a three-week period also produced effective treatment outcomes and these improvements were maintained up to nine months (Fortney et al., 2014). These findings suggested that brief MBSR programmes of three weeks or less may be effective in improving psychological functioning in HCPs.

These findings, however, continue to suggest that there is an uncertainty regarding the minimal effective amount of MBSR to alleviate stress and other related constructs (Smith, 2014). This may lead to ambiguity regarding what is the most effective length of MBSR programme in relation to improving psychological functioning, and this, in turn may adversely affect decision making regarding programme duration when adapting MBSR interventions. Further research, therefore, is required to explore the treatment amount, duration and intensity of MBSR programmes ranging from two to eight weeks (Manotas et al., 2014), and how this may play a role in affecting treatment outcomes for psychological functioning in HCPs.

MBSR Instructor Experience and Treatment Integrity

Irving et al. (2009) highlighted that from the ten studies they reviewed none clearly focused on instructor training or experience and that further research was warranted to explore whether this would influence the effectiveness of mindfulness interventions. From the eighteen studies included in this review, fourteen studies employed either certified MBSR instructors or individuals that had received professional training in MBSR. One study used an instructor who received professional training and had previous experience of using mindfulness (Kang et al., 2009). Two studies did not include details of instructor training or experience (Barbosa et al., 2013; Brady et al., 2014) and one study employed nurses who had received training on the intervention they delivered (Ando et al., 2011). The findings from this review suggested that instructor experience may not influence treatment effectiveness, as MBSR instructors delivered interventions in studies that produced both significant and/or non-significant findings. However, further empirical research is warranted to explore whether length of MBSR instructor experience is a moderator for MBSR treatment effectiveness.

In relation to programme integrity, Irving et al. (2009) highlighted that further research was warranted to investigate programme integrity of MBSR programmes. From the eighteen studies included in this review, only one study noted that programme fidelity was checked by instructors after each session (deVibe et al., 2013). However, it was also noted as a limitation in this study that the sessions could have been more systematically evaluated (e.g. via video recordings of the sessions) (deVibe et al., 2013).

Mindfulness Home Practice

Research suggested that participants whom completed mindfulness home practice, along with completing an MBSR programme, were more likely to observe bigger changes than

participants who did not (Carmody & Baer, 2009). Consistent with this, Salmon et al. (2004) suggested that it would be useful to explore the frequency and intensity of mindfulness practice external to MBSR programmes and how this influences treatment outcomes. Of the eighteen studies included in this review, four studies monitored the level of daily mindfulness practice by participants (Bazarko et al., 2013; deVibe et al., 2013; Erogul et al., 2014; Moody et al., 2013).

Two of the studies simply monitored adherence to daily mindfulness practice. Moody et al. (2013) found that participants practiced at least one mindfulness technique eight to ten times per week. However, MBSR had not resulted in any consistent significant improvements in scores on burnout, perceived stress and depression. Moody et al. (2013) suggested that their sample of paediatric and oncology staff had significantly higher levels of burnout and stress compared with other studies where MBSR had demonstrated a positive effect with HCPs (Cohen-Katz et al., 2005; Shapiro et al., 2005).

Erogul et al. (2014) found that medical students practiced mindfulness at home for a mean of 40.7 minutes per week, which was lower than the minimum requested time of 140 minutes per week in their study. The most pertinent barrier that medical students reported was that they could not achieve the discipline required for the home practice. Positive effects were observed for perceived stress and self-compassion, however, improvements were only sustained for self-compassion at six-month follow-up. Erogul et al. (2014) suggested that if levels of home practice were higher, the findings from the study may have been more robust. These findings reinforce the difficulties that individuals experience in maintaining mindfulness home practice outside of the MBSR programmes, therefore, briefer rather than longer mindfulness practices may be more conducive to increasing levels of mindfulness home practice (Hemanth & Fisher, 2014; Moore, 2008).

Two studies explored the relationship between mindfulness home practice and different aspects of psychological functioning in HCPs. Bazarko et al. (2013) found that 75% of nurses reported they maintained their MBSR practice at four-month follow-up and that they were practicing between one and five hours per week. Nurses that maintained the mindfulness practice compared to those that did not, had significantly lower scores on stress, personal burnout and work burnout. Similarly, deVibe et al. (2013) found that duration of home practice of mindfulness was a significant moderator of the treatment effect for mental distress for medical and psychology students post-intervention, when gender and mental distress were controlled for pre-intervention.

The findings from this review suggested that mindfulness home practice may increase observed improvements in psychological functioning, in particular for burnout and stress in HCPs. Furthermore, briefer mindfulness practices may help increase the level of mindfulness home practice. Further research is required to measure the quality and quantity of formal and informal mindfulness home practice, and how this influences psychological health outcomes (Irving et al., 2009).

MBSR Participant Incentives

A number of the studies provided participants with incentives to participate in the research and to minimize dropouts, incentives included book tokens (deVibe et al., 2013), a nominal gift (Kang et al., 2009), money and/or educational credits (Bazarko et al., 2013; Erogul et al., 2014; Goodman & Schorling, 2012; Martin-Asuero & Gacia-Banda., 2010; Newsome et al., 2012). It could be suggested that studies that included incentives for participation could have positively biased the results (Bazarko et al., 2013). Further research is recommended to explore how incentives for participation may influence attrition rates and treatment outcomes.

Two studies carried out MBSR programmes in psychiatric inpatient units. In the first study staff were allocated fifteen minutes meditation time within their working day (Hallman et al., 2014), and in the second study staff were paid for MBSR classes as a portion of their work time (Brady et al., 2012). However, Hallman et al. (2014) found that only a few staff members used the allocated meditation time and Brady et al. (2012) had a 30% attrition rate due to the varying work schedule demands of the unit.

Consistent with this, Byron et al. (2014) highlighted that common barriers to implementing mindfulness training for staff working within psychiatric inpatient units was limited time for staff to attend training sessions, insufficient coverage to allow staff to participate in the sessions without using additional personal time and inadequate preparation for the new initiative on some units.

Irving et al. (2009) proposed that higher attrition rates within an eight-week MBSR programme may be associated with being a healthcare professional. Due to the practical difficulties and the time restrictions that HCPs face, shorter MBSR interventions and well incorporated MBSR programmes into work schedules are recommended to reduce attrition rates in this professional group (Shapiro et al., 2008). Consistent with this, Hallman et al. (2014) highlighted that the shorter duration of the MBSR intervention (e.g., 8 days versus 4-8 weeks) in their study may have accounted for the retention of study participants at two-month follow-up. These findings suggested that shorter and well organised programmes into work schedules may reduce attrition rates and may be incentives for HCPs to engage in mindfulness interventions.

Conclusion

Previous research found that MBSR consistently reduced anxiety, emotional exhaustion and stress whilst also increasing positive affect (Irving et al., 2009). The findings from this review have provided further evidence that MBSR appeared to be effective in improving particular aspects of psychological functioning in different types of HCPs, including reducing anxiety, depression, rumination, and stress and increasing self-compassion. However, research findings relating to burnout and resilience highlighted that MBSR may not be as effective in reducing burnout and increasing resilience compared with other aspects of psychological functioning. The results relating to resilience, however, need to be treated with caution because only two studies in the current literature review examined this aspect of psychological functioning. The variation in these findings can be attributed to the distinct nature of burnout and resilience compared to other psychological outcomes, such as anxiety and depression. Therefore, further research is required into the underlying mechanisms of the relationship between burnout, resilience and mindfulness, and this, in turn may provide meaningful information as to how burnout and resilience can be targeted in HCPs via MBIs more effectively.

Findings from the review also suggested that MBSR appeared to be effective in increasing overall levels of mindfulness, however, when specific facets of mindfulness were investigated MBSR did not appear to have such positive effects. MBSR appeared to be more effective in increasing the facets of observing, non-judging (Manotas et al., 2014) and non-reacting to inner experiences (deVibe et al., 2013). The variability in these findings could be attributed to how certain facets of mindfulness (e.g., acting with awareness) may take longer to develop and how MBSR programmes may not target all the facets of mindfulness (e.g.,

describing). Further research is required to explore whether facets of mindfulness improve with training, and this, in turn may provide meaningful findings relating to how MBSR programmes can be adapted so that all facets of mindfulness are targeted. Further research is also recommended into the underlying mechanisms of mindfulness, and investigating how these play a role in producing the positive health outcomes that have been observed in MBSR effectiveness studies.

In relation to the robustness of the studies, the quality of most of the research studies were weak to moderate, they had methodological limitations which included variability in outcome measures, small sample sizes, self-selected samples and over-representation of Caucasian women. Many of the studies lacked randomisation, blinding procedures and control groups, and out of the three RCTs included in the review, only one study included a treatment comparison (e.g., leadership course) to MBSR (Pipe et al., 2009). It can be concluded that further studies need to include more robust study designs (namely RCTs), consistent use of assessment measures, bigger sample sizes and more heterogeneous samples, along with comparing MBSR programmes with other psychological interventions designed to improve psychological well-being in HCPs.

In relation to the different factors that may influence MBSR treatment outcomes in HCPs, this review reinforced previous research findings that briefer MBSR programmes (e.g., 4-7 weeks) appeared to be just as effective as the traditional eight-week MBSR programmes. However, findings from this review further suggested that MBSR programmes delivered in fewer than three weeks may also produce positive outcomes for HCPs, (e.g., for anxiety, depression, burnout, stress) (Ando et al., 2011; Fortney et al., 2014; Hallman et al., 2014). These findings may be helpful in relation to how abbreviated MBSR programmes are adapted and implemented for HCPs, in particular in inpatient settings, where attendance to MBSR sessions may be more difficult due to time and staffing restrictions. In addition, shorter MBSR

programmes cost less to deliver, this, in turn is an important factor in the current climate where healthcare organisations are under pressure to make financial savings. However, further research is still needed to identify the minimal effective amount of MBSR that may alleviate stress and related outcomes.

Other factors such as MBSR instructor experience, treatment integrity and participants' incentives and how they influence MBSR treatment outcomes require further empirical research. The findings from this review highlighted that MBSR trainer experience and programme integrity issues could improve the robustness of the findings if monitored and evaluated more effectively. However, the use of participant incentives could potentially positively bias research findings, in particular in studies where participants have self-selected.

In relation to home mindfulness practice, the findings from this review are in line with previous research which suggested that increased mindfulness home practice was associated with improvements in stress, burnout (Bazarko et al., 2013) and mental distress (deVibe et al., 2013). Further research is required in this area to measure the quality and quantity of mindfulness home practice and how it affects psychological functioning. The findings from this review also highlighted the difficulties for individuals in sustaining mindfulness home practice, therefore, briefer practices could prove more accessible to HCPs and help increase level of mindfulness home practice.

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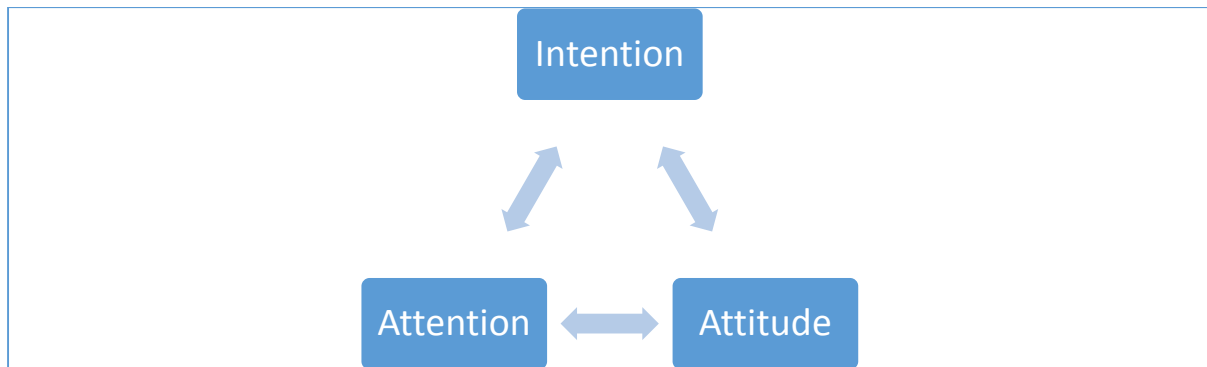
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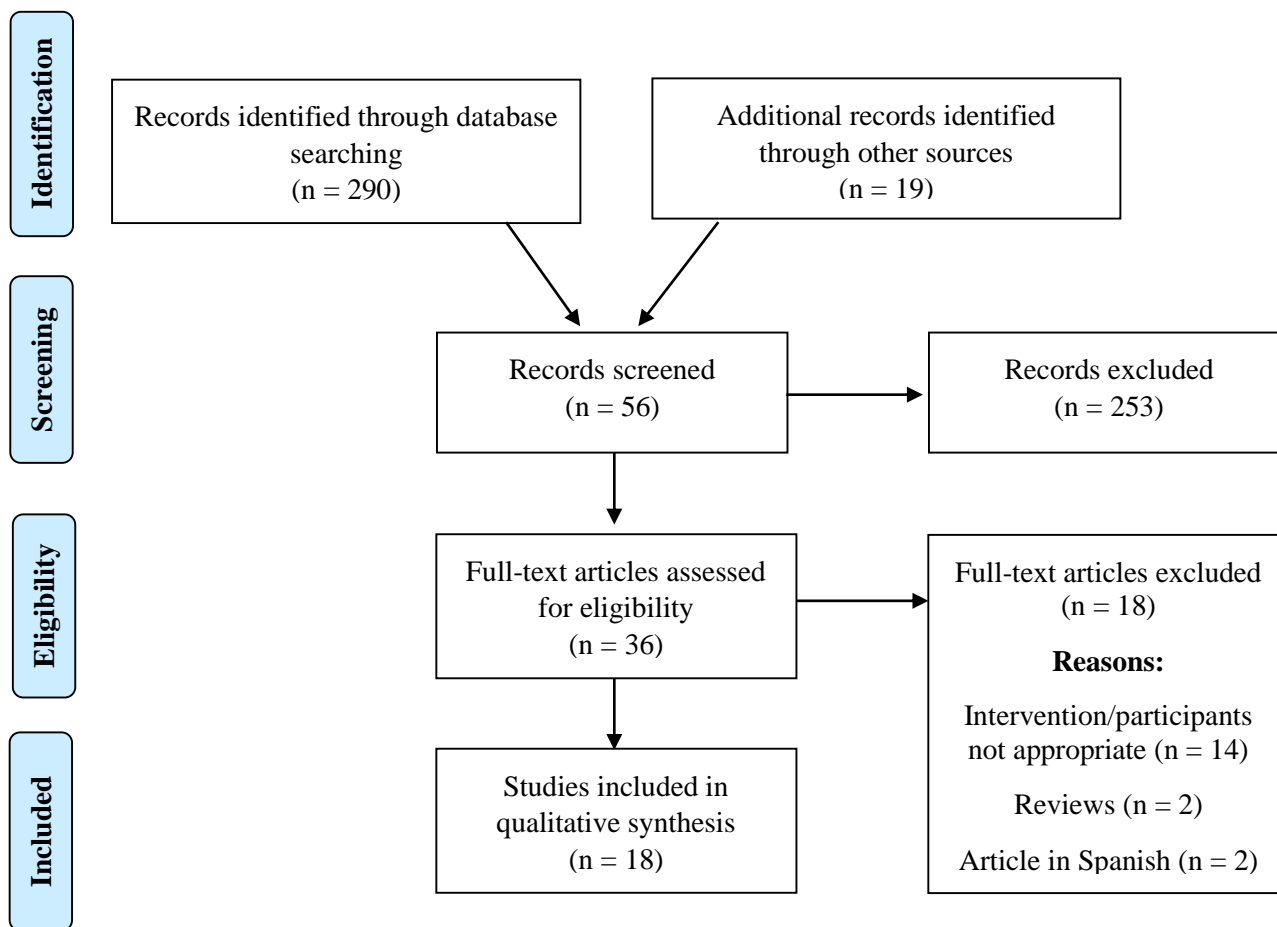
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Note: Studies reviewed in this paper are indicated by an asterisk.

Figure 1. Three mechanisms of mindfulness as a single cyclical process

Reproduced from Shapiro et al. (2006) (p. 375⁴).

⁴ Shapiro, S.L., Carlson, L.E., Astin, J.A., & Freedman, B. (2006). Review article: mechanism of mindfulness. *Journal of Clinical Psychology*, **62**: 373-386.

Figure 2. PRISMA flow diagram of the different phases of the literature review

Reproduced from Moher et al. (2009) (p.3⁵).

⁵ Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). Preferred reporting terms for systematic reviews and meta-analyses: the PRISMA statement. *Plos Medicine*, 6 (7): 1-6.

Table 1. Summary of MBSR Studies Reviewed

Primary Author/Year	Purpose	Design/ Method	Sample and <i>n</i>	Interventions	Measures	Salient Findings
Kang, Y.S. (2009)	To investigate the effects of a stress coping program based on mindfulness meditation on nursing students anxiety, stress and depression	Controlled clinical trial	University Nursing students Initial <i>n</i> =41 Final <i>n</i> =32 Gender: Male: 0% Female: 100% Mean Age: Experimental: 22.7 Control: 22.3 No ethnicity information reported.	8-week Stress Coping Programme based on MBSR 1.5 hours per sessions Control group Instructor had professional training in mindfulness	1) Psycho-social Well-being Index – Short Form 2) The State Trait Anxiety Inventory 3) The Beck Depression Inventory	Findings: 1) Decreased anxiety and stress 2) No significant difference in depression scores. Conclusion: 1) MBSR is effective in reducing stress and anxiety in nursing students. Limitations: 1) Sample was limited to juniors and seniors of the Department of Nursing 2) Pre-intervention values were not equal regardless of random allocation 3) Small sample size. Future research: 1) Increased sample size.
Pipe, T.B. (2009)	To investigate the effects of a mindfulness meditation programme for stress management on nurse leaders stress	Randomised controlled trial	Nurses in supervisor positions from a healthcare system Initial <i>n</i> =33 Final <i>n</i> = 32 Gender: Male: 3% Female: 97% Mean Age: Experimental: 50.2 Control: 49.4 No ethnicity information reported.	4-week MBSR programme 2-hour sessions Daily 30 minutes practice Control group: Leadership course MBSR Instructor	1) Symptom Checklist-90-Revised (SCL-90-R)	Findings: 1) Improved psychological distress 2) Reduced anxiety, depression and symptom intensity. Conclusion: 1) Short workplace courses on mindfulness strategies may be effective for other leaders and nursing groups. Limitations: 1) Limited monitoring of frequency and duration of meditation practice 2) Recruited motivated nurses 3) Small sample size 4) No follow-up between groups. Future research: 1) Comparing 4-week to the 8-week MBSR programme 2) Evaluate other approaches to stress management 3) Investigate organisational outcomes such as communication and teamwork.

Martin-Asuero, A. (2010)	To investigate the effects of MBSR on HCPs psychological distress	Pre-post design Two groups	HCPs in hospitals and primary care centres (e.g., doctors, nurses, psychologists) Initial $n=32$ Final $n=29$ Gender: Male: 17% Female: 83% Mean Age: 41.1	8-week MBSR Programme 2.5 hours per session plus one 8 hour session Daily 45 minutes mindfulness practice No control group MBSR Instructor	1) SCL-90-R 2) Emotional Control Questionnaire 3) Survey of Recent Life Experience 4) Positive and Negative Affect Scale	Findings: 1) A reduction in psychological distress 2) A reduction in rumination 3) A reduction in negative affect 4) Improvements maintained at 3-month follow-up 5) Reduction in stress but not significant 6) Decrease in rumination had a significant relationship with reductions in psychological distress. Conclusion: 1) MBSR decreases psychological distress in HCPs. Limitations: 1) Self-selected sample 2) No control group 3) Intervention effects on the group were not isolated. Future research: 1) Mechanisms of MBSR 2) Randomised controlled trials (RCTs).
Ando, M. (2011)	To investigate the effect of mindfulness based meditation therapy on nurses sense of coherence and mental health	Controlled clinical trial	Nurses working on a ward with elderly patients Final $n=28$ No gender, age or ethnicity information included.	Adapted MBSR programme Two sessions within a 2-week period Mindfulness home practice Control group Instructors were nurses who received training on the programme for 3 hours	1) General Health Questionnaire	Findings: 1) Reduction in anxiety and depression. Conclusion: 1) Adapted MBSR was effective in improving the psychological well-being of nurses. Limitations: 1) Small sample size 2) No randomisation 3) No balancing or matching between groups 4) No follow-up 5) Self-selected sample. Future research: 1) Increased sample size 2) Longer follow-up.
Geary, C. (2011)	To investigate the effect of MBSR on academic healthcare employees stress,	Controlled clinical trial	Nurses and respiratory therapists Initial $n=153$ Final $n=108$	8-week MBSR programme 3 hours per week 8-hour retreat	1) SCL-90-R 2) Perceived Stress Scale 3) SF-36 Health Survey Questionnaire	Findings: 1) Improvements in stress, psychological distress and mental well-being 2) Improvements maintained at one-year follow-up.

	well-being and spiritual experiences		<p>Gender Experimental Male: 15% Female: 85% Control: Male: 4% Female: 96%</p> <p>Mean Age: Experimental: 48 Control: 42</p> <p>Ethnicity: Experimental: 75% White, 18% Hispanic, 2% African American, 5% Asian. Control: 55% White, 14% Hispanic, 11% African American, 17% Asian.</p>	Control group Certified MBSR Instructor		<p>Conclusion: 1) MBSR reduces stress in an academic healthcare setting.</p> <p>Limitations: 1) Not randomised 2) No blinding 3) Significant difference between groups regarding percentage of patient care 4) Possible selection bias.</p> <p>Future research: 1) More RCTs.</p>
Brady, S. (2012)	To investigate the effect of mindfulness meditation on managing work stress and improving patient outcomes	Pre-post design One group	<p>Acute psychiatric inpatient unit Psychiatric nurses, social workers, mental health technologists, recreational therapist and health unit co-ordinator</p> <p><i>Final n=16</i></p> <p>Gender: Male: 19% Female: 81%</p> <p>No age or ethnicity information reported.</p>	<p>4-week MBSR group 1-hour per session Daily 30 minute mindfulness practice</p> <p>No control group</p> <p>Status of instructor not reported.</p>	<p>1) Mental Health Professionals Stress Scale 2) The Toronto Mindfulness Scale 3) Maslach Burnout Inventory</p>	<p>Findings: 1) Reduction in stress 2) Increase in mindfulness 3) Reduction in burnout but not significant.</p> <p>Conclusion: 1) MBSR was effective in decreasing staff stress levels.</p> <p>Limitations: 1) Small sample size 2) Not controlled nor randomised 3) Sampling bias 4) Did not take into account personality traits or cultural background 5) Response bias on measures 6) No comparison group.</p> <p>Further research: 1) Offering MBSR to staff on other hospital units.</p>
Goodman M.J. (2012)	To investigate the effects of a meditation course on	Pre-post design	Healthcare providers who practiced in community and university settings	8-week MBSR programme 2.5 hour sessions 7-hour retreat	1) Maslach Burnout Inventory	<p>Findings: 1) Improvements for emotional exhaustion, depersonalisation and personal accomplishment 2) Improvements for mental well-being</p>

	decreasing burnout and improving mental well-being in different HCPs		Physicians, nurses, psychologists and social workers Final <i>n</i> = 93 Gender Male: 35% Female: 65% No age or ethnicity information reported.	Daily 45 minutes mindfulness practice No control group Experienced MBSR instructors	2) SF-12v2 Health Survey Questionnaire	Conclusion: 1) MBSR was effective in improving burnout and mental well-being for a broad range of HCPs. Limitations: 1) No control group 2) No follow-up data 3) No measure of mindfulness which could provide valuable information regarding the mechanisms by which mindfulness is beneficial. Future research: 1) Control groups 2) Follow up 3) Measures relating to mechanisms of mindfulness.
Newsome, S. (2012)	To investigate the effects of mindfulness group-work on preventing stress and increasing self-compassion among helping professionals in training	Pre-post design Two groups	College students intending to enter helping professions (e.g., nursing, social work, counselling, psychology, and teaching) Final <i>n</i> =31 Gender: Male: 13% Female: 87% Mean Age: 29.3 Ethnicity: 55% Latino, 39% Anglo, 6% Bi-ethnic Anglo/Latino	8-week MBSR programme 90 minute sessions 45 minutes mindfulness practice 4 times per week No control group Professional training in MBSR	1) Perceived Stress Scale 2) Mindfulness Attention Awareness Scale 3) Self-Compassion Scale	Findings: 1) Reductions in stress 2) Increases in mindfulness 3) Increases in self-compassion 4) Stress and self-compassion remained stable at one-month follow-up 5) Mindfulness increased at one-month follow-up. Conclusion: 1) Stress decreased, mindfulness and self-compassion increased due to MBSR. Limitations: 1) No control group 2) No randomisation 3) Measures administered four times therefore could have increased familiarity 4) Student population, therefore cannot be generalised to helping professionals 5) Self-report measures 6) Norms for measures based on Anglo population 7) Short follow-up. Future research: 1) Observational measures 2) Norms based on minority groups 3) Participants to be clinically helping clients 4) Influence of group processes and therapeutic factors.

Barbosa, P. (2013).	To investigate the effects of MBSR on healthcare students emotional management	Controlled clinical trial	<p>Graduate healthcare students</p> <p>Initial $n=33$ Final $n=28$</p> <p>Gender: Male: 7% Female: 93%</p> <p>Mean Age: Experimental: 26.6 Control: 24.6</p> <p>Ethnicity: 46% Asian American 50% European White 4% Mixed</p>	<p>8-week MBSR programme 2.5 hour sessions and an 8-hour retreat</p> <p>Daily 35 minutes of formal mindfulness and 5-15 minutes of informal practice</p> <p>Control group</p> <p>Status of instructor not reported.</p>	<p>1) Burns Anxiety Inventory</p> <p>2) Maslach Burnout Inventory</p>	<p>Findings:</p> <ol style="list-style-type: none"> 1) Decrease in anxiety 2) Improvements maintained at three-week follow-up 3) No improvements in burnout. <p>Conclusions:</p> <ol style="list-style-type: none"> 1) MBSR reduces anxiety in healthcare students. <p>Limitations:</p> <ol style="list-style-type: none"> 1) Small sample 2) Non randomised 3) Stress may have varied between groups due to differences in learning environments and individual curriculums/workloads. <p>Future research:</p> <ol style="list-style-type: none"> 1) Long-term effects of MBSR on educational healthcare system as a whole.
Bazarko, B. (2013)	To investigate the effects of an innovative MBSR programme on health and well-being of nurses	Pre-post design	<p>Nurses within a large healthcare organisation</p> <p>Initial $n=41$ Final $n=36$</p> <p>Gender Male: 0% Female: 100%</p> <p>Mean age: 52.2</p> <p>No ethnicity information reported.</p>	<p>Group telephonic MBSR (tMBSR) sessions</p> <p>Two 8-hour person retreats, 6 weekly 1.5-hour group teleconference calls, email contact between sessions</p> <p>Daily 25-30 minutes mindfulness practice</p> <p>No control group</p> <p>MBSR Instructor</p>	<p>1) The Perceived Stress Scale</p> <p>2) Copenhagen Burnout Inventory</p> <p>3) SF-12v2 Health Survey Questionnaire</p> <p>4) The Self-Compassion Scale</p>	<p>Findings:</p> <ol style="list-style-type: none"> 1) Reduction in stress and burnout 2) Improvement in mental health and self-compassion 3) Improvements sustained at four-month follow-up 4) Participants who maintained mindfulness practice had lower stress and burnout and higher self-compassion. <p>Conclusions:</p> <ol style="list-style-type: none"> 1) tMBSR can be a low cost, feasible and scalable intervention that has positive impacts on health and well-being 2) tMBSR is accessible to staff that are unable to access standard MBSR. <p>Limitations:</p> <ol style="list-style-type: none"> 1) No control group 2) Small and self-selected sample 3) Unaware of previous MBSR experience 4) Homogenous sample as all female nurses 5) Incentives for participation could positively bias results. <p>Future research:</p> <ol style="list-style-type: none"> 1) RCTs for different types of HCPs 2) Sample to include men 3) Objective physiological measures of stress.

deVibe, M. (2013)	To investigate the effects of MBSR on mental distress, study stress, burnout, subjective well-being and mindfulness in medical and psychology students	Randomised controlled trial	<p>Medical and psychology students</p> <p>Initial $n=288$ Final $n=269$</p> <p>Gender: Male: 24% Female: 76%</p> <p>Mean Age: 23.8</p> <p>No ethnicity information reported.</p>	<p>7-week MBSR programme Six 1.5 hour sessions one 6-hour session Daily 30 minutes mindfulness practice</p> <p>Control group</p> <p>Certified MBSR instructors</p>	<p>1) General Health Questionnaire 2) Maslach Burnout Inventory – Student Version 3) Perceived Medical School Stress 4) Subjective Well Being 5) Five Facet Mindfulness Questionnaire – Long Form</p>	<p>Findings:</p> <ol style="list-style-type: none"> 1) Reduction in mental distress 2) Improvement in well-being 3) No significant reduction in stress or burnout 4) Mental distress, subjective well-being and stress improved for women 5) Increase on the non-reactiveness mindfulness facet 6) Increase for women on the non-judging mindfulness facet 7) Course attendance and duration of home practice had a moderating effect on mental distress. <p>Conclusion:</p> <p>1) MBSR can decrease mental distress and increase well-being, in particular for women.</p> <p>Limitations:</p> <ol style="list-style-type: none"> 1) Self-selected samples 2) Contamination between groups 3) No comparable control intervention 4) MBSR adherence not systematically evaluated 5) Study randomisation not stratified for gender. <p>Future research:</p> <ol style="list-style-type: none"> 1) MBSR research that included gender as a variable 2) Follow-up studies.
Fortney, L. (2013)	To investigate the effects of an abbreviated mindfulness intervention on health and well-being of primary care clinicians	Pre-post design Two groups	<p>Doctors Nurse practitioner Physician Assistant</p> <p>Final $n=30$</p> <p>Gender Male: 40% Female: 60%</p> <p>Mean Age: 40.5</p> <p>Ethnicity: 3% Hispanic, 97% White</p>	<p>Abbreviated version of the 8-week MBSR programme 14 hours over a weekend and then 2 2-hour follow up sessions Daily 10-20 minutes of mindfulness practice</p> <p>No control group</p>	<p>1) Maslach Burnout Inventory 2) Depression, Anxiety and Stress Scale 3) Resilience Scale</p>	<p>Findings:</p> <ol style="list-style-type: none"> 1) Improvements in emotional exhaustion, depersonalization and personal accomplishment 2) Decreased anxiety, depression and stress 3) Improvements maintained at nine-month follow-up 4) No significant improvements in resilience. <p>Conclusion:</p> <p>1) Abbreviated MBSR can be time-efficient tool to help support clinician health and well-being.</p> <p>Limitations:</p> <ol style="list-style-type: none"> 1) Uncontrolled pilot study 2) Lack of control group 3) Small sample size and self-selected participants 4) Group effects versus actual practice of mindfulness.

				MBSR Instructors		Future research: 1) RCTs.
Moody, K. (2013)	To investigate the effects of a mindfulness based course on burnout of paediatric oncology staff	Randomised controlled trial	Nurses, social workers, physicians, nurse practitioners, psychologist and child-life specialists Initial <i>n</i> =48 Final <i>n</i> =46 Gender Male: 20% Female: 80% No age or ethnicity information reported.	8-week MBSR programme 1 initial 6-hour session; 6 weekly 1-hour follow-up sessions and a final 3-hour session Daily 10 minutes mindfulness practice and informal practice Control group MBSR Instructors	1) Maslach Burnout Inventory 2) Perceived Stress Scale 3) Beck Depression Inventory	Findings: 1) High levels of burnout pre-intervention 2) No significant improvements in burnout, stress and depression. Conclusion: 1) Burnout is a major problem for paediatric oncology staff 2) Mindfulness could be a useful strategy in reducing burnout. Limitations: 1) Small sample size 2) Over-representation of women 3) Lack of intervention in the control group 4) Lack of blinding. Further research: 1) Include additional stress reduction techniques in the intervention to address burnout.
Vega, B. R. (2013)	To investigate the effects of mindfulness training on attentional control and anger regulation for psychotherapists in training	Controlled clinical trial	Resident intern psychiatrists and clinical psychologists Initial <i>n</i> =103 Final <i>n</i> =101 Gender Experimental: Male: 28% Female: 72% Control Male: 23% Female 77% Mean Age: Experimental: 29.6 Control: 28.4 No ethnicity information reported.	MBSR 8-week programme 2.5 hours per session Waitlist Control group MBSR Instructor	1) State Trait Anxiety Inventory 2) State-Trait Anger Expression Inventory-2 3) Beck Depression Inventory 4) Mindfulness Awareness Attention Scale	Findings: 1) No decreases in trait anxiety and state anger 2) Improvements in state anxiety, depression, dispositional mindfulness and anger reaction subscale of trait anger. Conclusion: 1) Mindfulness training improves measures of trait anger. Limitations: 1) Small group sizes 2) Lack of randomisation 3) Self-selected sample 4) Did not control for nonspecific effects of mindfulness training. Future research: 1) Effects of mindfulness training on different aspects of emotion regulation and cognition 2) Evaluate these effects within clinical situations.

Erogul, M. (2014)	To investigate the effects of an abridged MBSR programme on measures of wellness in first-year medical students	Controlled clinical trial	First-year medical students Initial $n=59$ Final $n=58$ Gender Male: 44% Female: 46% Mean Age: 23.5	Abridged 8-week MBSR programme 75 minutes per class 5-hour retreat Control group MBSR Instructor	1) Perceived Stress Scale 2) Resilience Scale 3) Self-Compassion Scale	Findings: 1) Increase in self-compassion, including six-month follow-up 2) Decrease in stress but not at six-month follow-up 3) No improvement in resilience 4) Resilience, significantly correlated with self-compassion and stress. Conclusion: 1) MBSR is a valuable curricular tool to enhancing wellness and professional development. Limitations: 1) Small sample size 2) Selection bias 3) Not blinded so participants could have performed based on suggestion & expectancy. Future research: 1) Track daily meditation.
Hallman, I.S. (2014)	To investigate the effects of MBSR on staff stress in a high-acuity psychiatric inpatient unit	Pre-post design	Nurses, teachers social worker, activity therapist and physician Final $n=12$ Gender Male: 17% Female: 83% Mean Age: 39 No ethnicity information reported.	MBSR 4 30-minute classes offered over 8 days Daily 15 minute meditation practice No control group MBSR Instructors	1) Toronto Mindfulness Scale 2) Perceived Stress Scale	Findings: 1) Decrease in stress, maintained at two months follow-up 2) Increase in mindfulness, maintained at two months follow-up. Conclusion: 1) Brief MBSR is effective in decreasing stress. Limitations: 1) Small sample size 2) Self-selected participants 3) Response bias due to self-report measures 4) Homogeneity of sample could limit generalisability 5) Daily mindfulness practice was limited. Future research: 1) Weekly emails/drop in sessions to increase daily mindfulness practice.
Manotas, M. (2014)	To investigate the effects of brief mindfulness training on stress and distress in Columbian HCPs	Controlled clinical trial	Healthcare professionals Doctors, nurses, support staff, scientists, physical therapists, mental health professionals, dentist,	Adapted 4-week programme 2 hour sessions Daily 25 minutes mindfulness practice	1) Brief Symptom Inventory-18 2) Perceived Stress Scale 3) Five Facet Mindfulness	Findings: 1) Increases in the mindfulness facets of observing, non-judging and overall mindfulness 2) No significant effects for mindfulness facets of describing, acting with awareness and non-reacting 3) Reduction in anxiety, depression, psychological distress and stress.

			<p>veterinarian and nutritionist</p> <p>Initial $n=131$ Final $n=83$</p> <p>Gender: Male: 9.6% Female: 90.4%</p> <p>Mean Age: 39.1</p> <p>No ethnicity information reported.</p>	<p>Control group</p> <p>MBSR Instructor</p>	<p>Questionnaire-Long Form</p>	<p>Conclusion: 1) 4 week mindfulness interventions may be effective in reducing stress among HCPs.</p> <p>Limitations: 1) No follow-up 2) No intention to treat analysis nor placebo group 3) Low scores on the Brief Symptom Inventory-18 resulting in a floor effect and less change over time 5) Did not monitor daily mindfulness practice 6) No measure of previous experience of meditation 7) Group cohesion could be a confounding variable.</p> <p>Future research: 1) Compare 4, 6 and 8 week meditation courses 2) Investigate whether mindfulness facets develop more with training.</p>
Song, Y. (2015)	To investigate the effects of MBSR on depression, anxiety, stress and mindfulness in Korean nursing students	Controlled clinical trial	<p>University nursing students</p> <p>Initial $n=50$ Final $n=44$</p> <p>Gender Male: 18% Female: 82%</p> <p>Age: Experimental: 19.6 Waiting list Control: 19.5</p> <p>No ethnicity information reported.</p>	<p>8-week MBSR programme 2-hour sessions</p> <p>Waiting list control group</p> <p>MBSR Instructor</p>	<p>1) Depression Anxiety and Stress Scale 2) Mindfulness Awareness Attention Scale</p>	<p>Findings: 1) Decrease in depression, anxiety and stress 2) Increase in mindfulness.</p> <p>Conclusion: 1) MBSR helped to address mild depression, anxiety and stress.</p> <p>Limitations: 1) No follow-up 2) Small and non-representative samples as mostly females in the sample 3) Did not confirm homework completion 4) Possible contamination between groups 5) Confounding variables not controlled for such as credit hours and clinical practicum.</p> <p>Future research: 1) How shorter mindfulness programmes can be maximised to generate positive effects.</p>

Table 2. Quality Assessment Tool for Quantitative Studies

Primary Author	Selection Bias	Study Design	Confounders	Blinding	Data Collection Methods	Withdrawal & Dropouts	Global Quality Rating
Kang, Y.S (2009)	Weak	Strong	Moderate	Moderate	Strong	Moderate	Moderate
Pipe, T.B. (2009)	Weak	Strong	Strong	Strong	Strong	Strong	Moderate
Martin-Asuero, A. (2010)	Weak	Moderate	Weak	Weak	Moderate	Strong	Weak
Ando, M. (2011)	Weak	Strong	Weak	Weak	Weak	Moderate	Weak
Geary, C. (2011)	Weak	Strong	Strong	Weak	Weak	Moderate	Weak
Brady, S, (2012)	Weak	Moderate	Weak	Weak	Moderate	Moderate	Weak
Goodman, M.J. (2012)	Moderate	Moderate	Strong	Weak	Moderate	Moderate	Moderate
Newsome, S. (2012)	Weak	Moderate	Weak	Moderate	Moderate	Weak	Weak
Barbosa, P. (2013)	Moderate	Strong	Moderate	Weak	Moderate	Strong	Moderate
Bazarko, D. (2013)	Weak	Moderate	Weak	Weak	Moderate	Moderate	Weak
deVibe, M. (2013)	Moderate	Strong	Strong	Strong	Strong	Strong	Strong
Fortney, L. (2013)	Weak	Moderate	Weak	Weak	Moderate	Moderate	Moderate
Moody, K. (2013)	Moderate	Strong	Strong	Weak	Strong	Strong	Moderate
Vega, B.R. (2013)	Weak	Strong	Weak	Weak	Strong	Strong	Weak
Erogul, M. (2014)	Weak	Strong	Moderate	Weak	Weak	Strong	Weak
Hallman, I.S. (2014)	Weak	Moderate	Weak	Weak	Moderate	Moderate	Weak
Manotas, M. (2014)	Moderate	Strong	Moderate	Moderate	Strong	Moderate	Moderate
Song, Y. (2015)	Weak	Strong	Moderate	Moderate	Moderate	Strong	Moderate

Section Four

Research Paper

**The Role of Coping and Mindfulness upon Occupational Stress and Burnout amongst
Mental Healthcare Professionals Employed Within Secure Hospitals**

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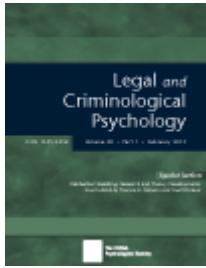
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Abstract

Purpose: Working within forensic inpatient settings can be emotionally challenging and stressful. The purpose of this study was to investigate the role of coping and dispositional mindfulness upon occupational stress and burnout in mental healthcare professionals (MHCPs) employed in secure hospitals (SHs).

Methods: A total of 151 participants were recruited from five low and medium SHs in Wales. Participants completed four questionnaires, measuring mindfulness, coping, occupational stress and burnout, as well as a background information questionnaire.

Results: MHCPs in SHs reported elevated levels of occupational stress, but despite reporting moderate levels of emotional exhaustion and depersonalisation, MHCPs retained a positive sense of personal accomplishment. Higher mindfulness skills were significantly associated with lower levels of maladaptive coping, occupational stress and burnout. Higher levels of maladaptive coping significantly predicted higher levels of occupational stress and emotional exhaustion and lower levels of personal accomplishment. In relation to facets of mindfulness, higher levels of acting with awareness significantly predicted lower levels of emotional exhaustion and depersonalisation.

Conclusions: Higher levels of mindfulness were significantly associated with lower maladaptive coping, occupational stress and burnout levels, therefore, mindfulness based interventions (MBIs) could be a viable strategy to support MHCPs employed in SHs. This research also suggested that higher levels of acting with awareness may help prevent emotional exhaustion and depersonalisation in MHCPs employed in SHs.

Introduction

Increasing levels of occupational stress and burnout are experienced amongst healthcare professionals (HCPs) (Goodman & Schorling, 2012). This may lead to elevated levels of staff sickness and turnover (Wright, 2005), reduced job satisfaction (Happell, Martin & Pinikahana, 2003) and poor quality of service user care (Coffey, 1999). A substantial amount of research has investigated occupational stress amongst HCPs, however, less research has investigated occupational stress and burnout in mental healthcare professionals (MHCPs) that are employed within secure hospitals (SHs) (Elliott & Daley, 2013).

Occupational Stress in MHCPs in SHs

Stress refers to an external pressure that a person may be exposed to, which in turn results in tension or strain (Kahn & Byosiere, 1992). In relation to stress within the workplace, stress is primarily regarded as a negative event or situation that a person is exposed to that may result in adverse effects (LeBlanc, deJonge & Schaufeli, 2000). Lazarus and Folkman's (1984) Cognitive Appraisal Theory of coping and stress highlights that coping responses are instigated by a cognitive appraisal of the events as challenging, harmful and/or threatening. MHCPs experiences of coping and stress may be influenced by their perceived threat of actual and potential violence, and associated difficult social interactions that may occur in SHs (Coffey, 1996). It can, therefore, be suggested that Lazarus and Folkman's (1984) model can be applied to MHCPs employed in SHs.

Numerous research studies have found that working within SHs were associated with increased occupational stress (Chadler & Nolan, 2000; Coffey, 1999; Elliott & Daly, 2013; Jones, Janman, Payne & Rick, 1987; Kirby & Pollock, 1995). Jones et al. (1987) found that psychiatric nurses working within a large SH were relatively more stressed than employees

from an engineering plant (Banks et al., 1980) and another group of nursing staff (Payne & Jones, 1986). Similarly, Kirby and Pollock (1995) found that forensic psychiatric nurses that worked on a low and medium secure psychiatric ward reported elevated levels of occupational stress when compared with mental health workers (Caplan, 1993). Furthermore, Elliott and Daley (2013) found that MHCPs working within medium SHs reported higher levels of occupational stress than staff working within a residential intellectual disability unit.

Conversely, Coffey (1999) found that forensic community mental health nurses attached to medium SHs reported lower levels of occupational stress compared with generic community psychiatric nurses. In addition, Chadler and Nolan (2000) found high levels of occupational stress in nurses working in a SH and nurses working in an acute adult mental health hospital, however, no significant differences were found between groups. Levels of occupational stress amongst MHCPs employed in SHs were inconsistent. These findings may be explained by research being carried out in different settings, and some MHCPs accepting stress as a fundamental part of working within SHs (Phillips, 1983).

Burnout in MHCPs in SHs

Maslach, Jackson and Leiter's (1996) conceptualisation of burnout incorporated three main components, namely emotional exhaustion, depersonalisation and personal accomplishment. This has been the most widely used model to define and understand burnout within SHs. Emotional exhaustion refers to the reduced ability to experience emotions relating to work. Depersonalisation involves MHCPs distancing themselves from service users by discounting the characteristics that make them unique. Personal accomplishment relates to the feeling of achievement from working with service users (Maslach et al., 1996; Maslach, Schaufeli & Leiter, 2001). A high degree of burnout is reflected by low scores in

personal accomplishment, and high scores in emotional exhaustion and depersonalisation (Maslach et al, 1996).

The majority of research studies have found moderate levels of burnout in terms of emotional exhaustion and depersonalisation amongst MHCPs working within SHs (Brooker & Whyte, 2001; Coffey, 1999; Elliott & Daley, 2013; Ewers, Bradshaw, McGovern & Ewers, 2002; van Dierendonck, Schaufeli & Buunk, 1996). However, high levels of emotional exhaustion (Oddie & Ousley, 2007) and depersonalisation (Dennis & Leach, 2007) have been reported in nursing staff and occupational therapists working in SHs. Similarly, high burnout levels of personal accomplishment were observed in therapists employed in a Dutch SH (van Dierendonck et al., 1996) and in a forensic mental health team (Brooker & Whyte; 2001).

Conversely, moderate burnout levels of personal accomplishment were observed in a variety of MHCPs working within SHs (Coffey; 1999; Dennis & Leach, 2007; Elliott & Daley, 2013), and low burnout levels of personal accomplishment were observed in forensic mental health nurses and occupational therapists working in SHs (Ewers et al., 2002; Oddie & Ousley; 2007). From reviewing the burnout literature, it can be suggested that despite MHCPs in SHs often experiencing moderate to high levels of emotional exhaustion and depersonalisation, they continued to retain a positive sense of personal accomplishment, and thus felt able and confident in performing their duties (Oddie & Ousley, 2007).

Coping in MHCPs in SHs

Coping can be defined as a person's ability to manage events or situations that they perceive as potentially threatening to their well-being (Folkman, Lazarus, Gruen & DeLongis, 1986). Folkman and Lazarus's (1984) Cognitive Appraisal Theory of coping and stress highlights that coping is a process that follows the appraisal of events as challenging or

threatening. People may display different coping responses to stressors, i.e., coping responses can be adaptive (e.g., helpful or effective) or maladaptive (e.g., unhelpful or ineffective). Adaptive coping strategies are likely to be associated with lower levels of negative health status (e.g., chronic conditions, specific somatic symptoms, disability in working, eating, dressing and mobility) (Folkman et al., 1986), whereas maladaptive coping strategies are likely to be associated with increased negative health outcomes (e.g., poor mental health) (Healy & McKay, 2000).

Only one study to date investigated coping and stress as predictors of burnout in MHCPs employed in SHs, and negative coping and occupational stress were found to significantly predict higher levels of emotional exhaustion and depersonalization (Elliott & Daley, 2013). Studies relating to other areas of mental health found that higher levels of maladaptive coping were a significant predictor for higher levels of emotional exhaustion or perceived stress in professionals working with children with learning disabilities (Devereaux, Hastings, Noone, Firth & Totsika, 2009; Hastings & Brown, 2002; Hatton, Brown, Caine & Emerson, 1995). Similarly, Griffith, Barbakou and Hastings (2014) found that a form of avoidant and maladaptive coping, namely wishful thinking coping, was predictive of higher levels of emotional exhaustion and depersonalisation, and lower levels of personal accomplishment in therapists delivering interventions to children with autism.

Dispositional Mindfulness in MHCPs in SHs

Mindfulness can be defined as paying attention on purpose to the present moment in a non-judgemental manner (Kabat-Zinn, 2003). Dispositional or trait mindfulness refers to a person's natural occurring ability to employ this intentional stance of awareness (Brown &

Ryan, 2003). The attentional aspects of mindfulness may be related to the cognitive appraisal process of symptoms of stress (Salmon et al., 2004). By using mindfulness skills people can observe their internal experiences and external situations, and this, in turn enables them to notice the link between an automatic stress-reaction (Kabat-Zinn, 1990; 2013) and subsequent experiences of distress (Williams & Swales, 2004). Shapiro, Carlson, Astin and Freedman's (2006) concept of 'reperceiving' refers to people being able to objectively observe their thoughts, feelings and external experiences, and this process then reduces the automatic stress-reaction.

Reperceiving also influences others mechanisms such as self-regulation (Shapiro et al., 2006). Theories of self-regulation highlight that awareness and attention maintain and enhance psychological and behavioural functioning (Brown & Ryan, 2003). One of these theories is referred to as Self-Determination Theory (SDT; Deci & Ryan, 1985; Ryan & Deci, 2000), which highlights that awareness facilitates choice of behaviours that are consistent with one's interests, needs and values (Deci & Ryan, 1980). Furthermore, Holzel et al. (2011) proposed that different components of mindfulness work together as a rising spiral process to produce improvements in self-regulation. The components include: 1) attention regulation; 2) body awareness; 3) emotion regulation; and 4) a change in perspective on the self.

Similar to the process of reperceiving (Shapiro et al., 2006), a change in perspective in the self (Holzel et al., 2011) may enable individuals to appraise situations differently and subsequently employ more adaptive coping strategies, and therefore make behavioural decisions (Brown, Ryan & Creswell, 2007) that are more congruent with individual values, service user needs and organisational goals. Therefore, it can be suggested that dispositional mindfulness may help MHCPs employed in SHs experience less occupational stress.

Existing studies investigating the relationship between coping, dispositional mindfulness and occupational stress have solely focused on student and random population samples. Palmer and Rodger (2009) found that university students who reported higher levels of dispositional mindfulness skills were more likely to employ adaptive coping strategies, were less likely to use maladaptive coping strategies and reported lower levels of stress. This is consistent with existing research that has demonstrated the effectiveness of mindfulness based interventions (MBIs) in reducing stress in HCPs (Irving, Dobkin & Jeason, 2009). Furthermore, Branstrom, Duncan and Moskowitz (2011) found that dispositional mindfulness may act as a buffer against the adverse effects of perceived stress on psychological well-being in a random population based sample. These findings provide additional support for the use of mindfulness skills as an intervention to improve psychological functioning among MHCPs experiencing stress in SHs.

Focus of the Present Study

The existing studies that have investigated occupational stress and burnout in MHCPs employed in SHs have methodological limitations. For example, many had small sample sizes, evidence of selection bias (e.g., motivated or highly stressed MHCPs participating in the research), some relied on single assessment measures, and many solely focused on nursing staff. In addition, existing studies solely reported levels of occupational stress and burnout rather than looking at causal relationships. Numerous studies have investigated the relationship between coping mechanisms, occupational stress and burnout, however, most studies have been conducted in the intellectual disability field. A small number of studies have focused on the relationship between coping strategies, dispositional mindfulness and

stress, however, they have been conducted within student and random population based samples, and no studies to date have been carried out in SHs.

This present study will, therefore, build on existing research by exploring the nature of the relationship between coping strategies, different facets of dispositional mindfulness, occupational stress and burnout in different professional groups employed in SHs in Wales. Based on the current research and theoretical models regarding coping, mindfulness, occupational stress and burnout, the following hypotheses will be tested in this study: 1) MHCPs employed in SHs will report elevated levels of occupational stress and burnout compared with other groups of MHCPs; 2) MHCPs employed in SHs that report higher levels of dispositional mindfulness will report lower levels of maladaptive coping, occupational stress and burnout; and 3) The psychological predictors, namely coping strategies and facets of dispositional mindfulness, will be predictive of occupational stress and burnout, whilst taking into account demographic variables and other aspects of working environments.

Method

Procedure

The study received ethical approval from the School of Psychology at Bangor University and by the NHS Wales Research Ethics Committee. Five medium and low SHs were independently recruited by the researcher. Postal research packs were then sent to the research contact at each hospital. It was the research contact's responsibility to distribute the postal research packs to all clinical MHCPs via the internal mail system.

Postal research packs included a participant information sheet, and an instruction sheet which detailed information about the nature of the study. Implicit consent was assumed once MHCPs completed and returned the questionnaires. A contact sheet was also included which detailed relevant local agencies information for MHCPs to access for emotional support if required. The completed research packs were returned in a pre-paid envelope directly to the researcher. A month following the initial distribution of the postal research packs, the research contacts at each hospital were provided with a reminder email to distribute to all staff (see Appendix I).

Participants

A total of 630 postal research packs were distributed to MHCPs that were employed within five SHs in Wales, 151 research packs were returned, resulting in a response rate of 24%. Participants included different professional groups that had clinical contact with service users, this ranged from healthcare assistants, nursing staff, occupational therapists, psychologists, psychiatrists and social workers. The demographic and health related information of participants are summarised in Table 1 below.

*Inset Table 1***Measures**

A postal research pack included a background information questionnaire and four assessment measures. The background information questionnaire included questions relating to demographic and health-related factors. The four assessment measures included were as follows:

The Staff Stressor Questionnaire (SSQ) (Hatton et al, 1999)

The SSQ is a 33-item questionnaire that assesses work stressors amongst HCPs. Items represent potential stressors and are scored on a five point Likert scale. The SSQ has seven subscales: 1) service user challenging behaviour; 2) service user poor skills; 3) lack of staff support; 4) lack of resources; 5) low job-status; 6) bureaucracy and 7) work-home conflicts. A total stress score is calculated and higher scores on the SSQ suggest higher levels of perceived stress. Hatton et al. (1999) found that all subscales had adequate internal reliability. Tavakol and Dennick (2011) recommended that Cronbach alpha levels were acceptable between 0.70 and 0.95. Levels of internal consistency for this study were acceptable for all SSQ subscales and total score, with the exception of one subscale bureaucracy ($\alpha=0.58$). Cronbach alpha scores are displayed in Table 2.

Insert Table 2

The Maslach Burnout Inventory (MBI) – Human Services Survey (Maslach et al, 1996)

The MBI is a 22-item questionnaire that measures three core dimensions of burnout including 1) personal accomplishment (PA); 2) emotional exhaustion (EE) and 3) depersonalization (DP). Each item is rated on a seven point Likert Scale. The MBI calculates three subscale scores and burnout is present with high scores on the EE and DP subscales and low scores on the PA subscale. Maslach et al. (1996) found that all three subscales had a good level of internal consistency (EE, $\alpha=0.90$; DP, $\alpha=0.79$; PA, $\alpha=0.71$). The test-retest reliability for the two subscales EE (0.82) and PA (0.80) were good and for DP (0.60) it was acceptable. Levels of internal consistency for this study were acceptable for all MBI subscales (see Table 2).

The Brief Cope Inventory (BCI) (Carver, 1997)

The BCI is a 28-item questionnaire that assesses a broad range of coping strategies and items are scored on a four point Likert scale. The BCI originally had 14 subscales; however, Hastings & Brown (2002) found good levels of reliability for two dimensions of adaptive and maladaptive coping for staff working in child intellectual disability services. The adaptive coping subscale was made up of 16 items and eight subscales (active coping, planning, positive reframing, acceptance, humour, religion, using emotional support and using instrumental support) and Cronach's alpha was 0.83. The maladaptive coping subscale was made up of 12 items and six subscales (self-distraction, denial, venting of emotions, substance use, behavioural disengagement and self-blame) and Cronbach's alpha was 0.75. These two coping dimensions were used in the present study and acceptable levels of internal consistency were found for both BCI subscales (see Table 2).

The Five Facet Mindfulness Questionnaire-Short Form (FFMQ-SF) (Bohlmeijer, ten Klooster, Fledderus, Veehof and Baer, 2011)

The FFMQ-SF is a 24-item questionnaire designed to measure dispositional mindfulness on a five point Likert scale. The FFMQ-SF includes five subscales, and all demonstrated adequate internal consistency: observing ($\alpha=0.78$), describing ($\alpha = 0.91$), acting with awareness ($\alpha=0.86$), non-judging of inner experience ($\alpha=0.86$) and non-reactivity to inner experience ($\alpha=0.73$). A total FFMQ mindfulness score was also calculated based on the five subscales, higher scores indicated higher mindfulness. Levels of internal consistency were acceptable for all FFMQ-SF subscales and total mindfulness score (see Table 2).

Data Analysis

The Statistical Package for Social Sciences (SPSS), Version 22, was employed to undertake all data preparation and statistical procedures. Initially the data was prepared for statistical analysis, this involved addressing issues related to missing data and outliers and checking for violations of normality. Appropriate statistical tests were then used for the three different hypotheses. For hypothesis one, mean scores from the current sample for occupational stress and burnout were compared to other MHCPs using one-sample *t*-tests. For hypothesis two, correlational analysis was employed to examine associations between mindfulness and coping, occupational stress and burnout.

For hypothesis three, the first stage involved completing correlational analysis to examine associations between facets of mindfulness (e.g., observing, describing, acting with awareness, non-judging of inner experiences and non-reacting to inner experiences) and coping (e.g., adaptive and maladaptive coping) with occupational stress and burnout (e.g., personal accomplishment, emotional exhaustion and depersonalisation). The second staged

involved using Spearman's rho correlations, independent sample *t*-tests and one-way ANOVAs as appropriate, to investigate the influence of demographic variables and aspects of work environment on occupational stress and burnout. Demographic variables included age, gender, ethnic origin, marital status, having children and having dependents. Aspects of work environment included place of work, length of service, sick days, adequate supervision, hours of supervision per month, ward based/non-ward based MHCPs and service user gender.

The third stage involved conducting two-step linear regression models to investigate whether the variables that were found to be significant in the correlational analyses (e.g., adaptive coping, maladaptive coping, acting with awareness, non-judging of inner experiences, and total stress) were still significant predictors of occupational stress and burnout, whilst controlling for significant demographic variables and significant features of work environment. The fourth stage involved applying the technique of bootstrapping (Efron & Tibshirani, 1993) to the regression analyses in order to establish whether violations of normality biased the findings.

Data Preparation

The researcher generated rules for missing data for all the subscales of the assessment measures. This involved generating the maximum number of items that could be missing for each subscale in order for the data to still be included in the study (see Appendix J). In order to avoid losing data from the study, the mean substitution method (Osbourne, 2013) was employed to manage missing item values within the subscales. The use of alternative methods that involved losing data e.g., pairwise deletion, were therefore, not used. The mean substitution process was completed for a total of 81 missing values (0.5% of the data points; see Appendix K).

Outliers were identified by recognising values that were 1.5 below or above the interquartile range of the data (Chamber, Cleveland, Kleiner & Tukey, 1983). The value of the 12 (0.07% of the data points) identified outliers were then adjusted to one value higher than the highest subscale score that was not considered an extreme score (Tabachnick & Fidell, 2006; see Appendix L). Due to the Shapiro-Wilk Test being very sensitive to normality violations with larger sample sizes, the q-q plots were examined to determine the normality distribution of the data. The q-q plots revealed that all variables appeared normally distributed with the exception of the MBI emotional exhaustion and depersonalisation subscales, SSQ total stress score and the BCI maladaptive coping subscale.

The Bonferroni correction was applied to correlational analyses for study variables to control for multiple measurement, the new alpha level for a total of 36 correlations was .001 ($0.05/36=00139$). The Bonferroni correction was not applied to correlational analyses for identifying confounding variables, because this correction in effect makes the final regression analyses less, rather than more, conservative. The adjusted alpha level ($p \leq .001$) was not applied to regression or bootstrapping analyses because multiple measurement had already been accounted for in the correlational analyses.

Results

Levels of Occupational Stress and Burnout amongst MHCPs in SHs

Scores on the MBI were compared with the recommended cut-off scores for high burnout for MHCPs (Maslach et al., 1996) which are presented in Table 3.

Insert Table 3

The mean score for personal accomplishment was 34, which fell within the low burnout range. The mean score for emotional exhaustion was 18 and the mean score for depersonalisation was 5; both these scores fell within the moderate burnout range. Percentage scores for low, moderate and high levels of burnout were calculated for all three MBI subscales and are displayed in Table 4 below.

Inset Table 4

Mean scores for all seven subscales of the SSQ and the SSQ total score were calculated. Results showed that the highest level of occupational stress was associated with service user challenging behaviour (M=11.09). Moderate levels of occupational stress were associated with bureaucracy (M=4.05), poor service user skills (M=4.76), lack of resources (M=5.68) and low job-status (M=5.70). The least levels of occupational stress were associated with a lack of staff support (M=3.39) and home-work conflict (M=3.51) (see Table 5).

Levels of Occupational Stress and Burnout amongst MHCPs in SHs Compared with Other MHCPs

One-sample *t*-tests were employed to compare differences in the mean scores of the MBI and SSQ subscales with secondary data from two other studies (Happell et al., 2003; Robertson et al., 2005). Secondary data was used as normative data was not available. Stress mean scores were compared with mean scores obtained from staff working in a residential home for people with intellectual disabilities, and where more than 50% of service users had challenging behaviour (Robertson et al., 2005). Burnout mean scores were compared with mean scores obtained from psychiatric nurses that were employed within a mainstream mental health service (community and inpatient; Happell et al., 2003).

Seven one-sample *t*-tests showed that MHCPs employed within SHs reported significantly higher stress levels on all seven subscales of the SSQ, compared to staff working in a residential home for people with an intellectual disability. Significant differences were moderate in size for all subscales, with the exception of a large significant difference between groups for service user challenging behaviour. The seven subscales included 1) service user challenging behaviour ($t=15.50, p\leq.001$); 2) poor service user skills ($t= 7.84, p\leq.001$); 3) lack of staff support ($t=5.22, p\leq.001$); 4) lack of resources ($t=15.24, p\leq.001$); 5) low job-status ($t=10.42, p\leq.001$); 6) bureaucracy ($t=10.99, p\leq.001$) and 7) work-home conflict ($t=5.62, p\leq.001$). The results are displayed in Table 5 below.

Insert Table 5

Three one-sample *t*-tests showed that in relation to personal accomplishment, MHCPs employed within SHs had significantly slightly lower levels of personal accomplishment ($M=34.31, SD=7.15$), therefore, slightly higher burnout, compared with psychiatric nurses

within mainstream mental health services ($M=35.6$) ($t=-2.22$, $p=.028$). In relation to emotional exhaustion (EE; $M=18.18$, $SD=10.58$) and depersonalisation (DP; $M=4.93$; $SD=4.33$), MHCPs employed in SHs had slightly higher levels of burnout than psychiatric nurses within mainstream mental health services (EE Mean=17.4; DP Mean=4.5), however, differences between groups were not significant (EE $t=.905$, $p=.367$; DP $t=1.227$, $p=.222$; see Table 5).

Dispositional Mindfulness in MHCPs in SHs and Maladaptive Coping, Occupational Stress and Burnout

In order to account for normality violations, the non-parametric test Spearman's rho correlation was conducted between the continuous variable FFMQ overall mindfulness score and the two BCI subscales, the three MBI subscales and the SSQ total stress score.

Maladaptive Coping

Spearman's rho correlations indicated that FFMQ total mindfulness had a significant moderate negative correlation with BCI maladaptive coping ($\rho=-.366$, $p\geq.001$). These results highlighted that higher FFMQ total mindfulness scores were significantly associated with lower maladaptive coping scores. A non-significant correlation was found between FFMQ total mindfulness and BCI adaptive coping ($\rho=-.045$, $p=.585$). Results are displayed in Table 6.

Insert Table 6

Occupational Stress

Spearman's rho correlation showed that FFMQ total mindfulness scores had a significant moderate negative correlation with SSQ total stress scores ($\rho = -.351, p \geq .001$). These results indicated that higher FFMQ total mindfulness scores were significantly associated with lower SSQ total stress scores (see Table 6).

Burnout

Spearman's rho correlations revealed that FFMQ total mindfulness scores had a significant moderate positive correlation with personal accomplishment ($\rho = .307, p \leq .001$), a significant weak negative correlation with depersonalisation ($\rho = -.261, p \leq .001$) and significant moderate negative correlation ($\rho = -.393, p \leq .001$) with emotional exhaustion. These results indicated that lower FFMQ total mindfulness scores were significantly associated with lower levels of personal accomplishment. Results also indicated that higher FFMQ total mindfulness scores were significantly associated with lower levels of emotional exhaustion and depersonalisation (see Table 6).

Coping Strategies and Facets of Dispositional Mindfulness Predictive of Occupational Stress and Burnout in MHCPs in SHs

Initially Spearman's rho correlations, independent sample *t*-tests and one-way ANOVAs were employed to investigate whether demographic variables were significantly associated with the MBI subscales and the SSQ total stress score. *T*-tests and one-way ANOVA statistical tests were considered robust enough for violations of normal distributions, because the sample size for this study was sufficiently large ($n \geq 100$; Field, 2013).

Relationships between continuous demographic variables, namely age, length of service, sick days and actual hours of supervision provided per month and the outcome variables (e.g., SSQ total stress and three MBI subscales) were explored using Spearman's rho correlation. Small significant correlations were found between emotional exhaustion and actual supervision hours provided per month ($\rho=-.199$, $p=.032$); and depersonalisation and age ($\rho=-.190$, $p\leq.021$) and actual supervision hours provided per month ($\rho=-.222$, $p=.017$). No other significant correlations were found between the variables.

Associations between dichotomous demographic variables, namely gender, children, having dependants, adequate supervision and ward based/non-ward based MHCPs and the outcome variables (e.g., SSQ total stress and three MBI subscales) were explored with independent samples *t*-tests. Significant associations were found between stress and having dependants ($t=3.045$, $p=.003$), shift hours ($t= 4.07$, $p\leq.001$), adequate supervision ($t=-.285$, $p=.005$) and ward based/non-ward based MHCPs ($t= 4.49$, $p\leq.001$); emotional exhaustion and having dependants ($t= 2.12$, $p=.035$) and adequate supervision ($t=-3.15$, $p=.002$); and depersonalisation and shift hours ($t=3.13$, $p=.002$) and ward based/non-ward based MHCPs ($t=2.98$, $p=.006$). No other significant associations between the variables were found.

The association between demographic variables that had more than two groups, namely place of work, service user gender, marital status and ethnic origin and outcome variables (e.g., SSQ total stress score and three MBI subscales) were explored with one-way ANOVAs. No significant associations were found between the demographic variables and the outcome variables.

Spearman's rho correlations ($p\leq.001$) were then used to identify potential significant predictors (e.g., coping strategies and facets of dispositional mindfulness) for the four outcome variables (e.g., the SSQ total stress and the three MBI subscales). The correlations are displayed in Table 7 below.

Insert Table 7

Four stepwise regression analyses were then conducted for the four outcome variables (e.g., the SSQ total stress and the three MBI subscales). Confounding variables were placed in the first step, and the variables that were significantly correlated with the outcome variables were placed as predictors in the second step. The final regression model for each variable was also refitted using bootstrapped β estimates (Efron & Tibshirani, 1993), in order to establish whether violations of normality biased the research findings.

Coping Strategies and Facets of Dispositional Mindfulness Predictive of Occupational Stress

A stepwise regression was employed to explore predictors of occupational stress. The confounding variables, namely having dependants, adequate supervision, shift hours and ward based/non-ward based MHCPs were placed in the base regression model to control for their influence on the occupational stress scores. The predictors' adaptive coping, maladaptive coping and non-judging of inner experiences were then included in the second step of the regression model.

In the base regression model, adequate supervision ($\beta=.176$, $p=.035$) and ward based/non-ward based MHCPs ($\beta=-.298$, $p\leq.001$) were found to be significant predictors of occupational stress and this explained 14.3% of the variance ($r^2=.143$, $p=.035$). Whilst controlling for adequate supervision and ward based/non-ward based MHCPs, the final regression model indicated that maladaptive coping ($\beta=.379$, $p\leq.001$) was a significant predictor of occupational stress and explained a further 13.7% of the variance ($r^2=.280$,

$p \leq .001$). This suggested that higher levels of maladaptive coping significantly predicted higher levels of occupational stress.

Bootstrapping analyses confirmed the significant results for ward based/non-ward based staff (CI -18.123--5.818, $p = .001$), and maladaptive coping (CI .740–1.990, $p = .001$), however, a non-significant result was found for adequate supervision (CI -1.672-11.416, $p = .147$).

Coping Strategies, Facets of Dispositional Mindfulness and Occupational Stress Predictive of Personal Accomplishment

A stepwise regression was employed to explore predictors of personal accomplishment. No confounding variables were required to be entered into the regression model, therefore, solely the predictors' total stress and maladaptive coping were included in the model. The regression model showed that maladaptive coping was a significant predictor of personal accomplishment ($\beta = -.318$, $p \leq .001$) and explained 10.1% of the variance ($r^2 = .101$, $p \leq .001$). This suggested that higher levels of maladaptive coping significantly predicted lower levels of personal accomplishment. Bootstrapping analyses confirmed the significant results for maladaptive coping (CI -.608 - -.223, $p = .001$).

Coping Strategies, Facets of Dispositional Mindfulness and Occupational Stress Predictive of Emotional Exhaustion

A stepwise regression was employed to explore predictors of emotional exhaustion. The confounding variables, namely having dependants, adequate supervision and actual supervision hours provided per month were placed in the base regression model to control for their influence on the emotional exhaustion scores. The predictors' total stress, adaptive

coping, maladaptive coping, acting with awareness and non-judging of inner experiences were then included in the second step of the regression model.

In the base regression model, adequate supervision ($\beta=.198, p=.039$) was found to be a significant predictor of emotional exhaustion and this explained 3.9% of the variance ($r^2=.039, p=.039$). Whilst controlling for adequate supervision, the final regression model showed that total stress ($\beta=.438, p\leq.001$), maladaptive coping ($\beta=.210, p\leq.001$) and acting with awareness ($\beta =-.277, p=.013$) were significant predictors of emotional exhaustion and explained a further 50.9% of the variance ($r^2=.548, p=.013$). Results suggested that higher levels of maladaptive coping and higher levels of total stress significantly predicted higher levels of emotional exhaustion, and that higher levels of acting with awareness significantly predicted lower levels of emotional exhaustion.

Bootstrapping analyses confirmed the significant results for total stress (CI .162 - .301, $p=.001$), maladaptive coping (CI .098-.668, $p=.010$) and acting with awareness (CI - 1.066 – -.252, $p=.001$), however, a non-significant result was found for adequate supervision (CI -.799-5.239, $p=.140$).

Coping Strategies, Facets of Dispositional Mindfulness and Occupational Stress Predictive of Depersonalisation

A stepwise regression was employed to explore predictors of depersonalisation. The confounding variables, namely age, ward based/non-ward based MHCPs, shift hours and actual supervision hours provided per month were placed in the base regression model to control for their influence on depersonalisation scores. The predictors total stress, maladaptive coping, acting with awareness and non-judging of inner experiences were then included in the second step of the regression model.

In the base regression model, ward based/non-ward based MHCPs ($\beta=-.304, p=.001$) was found to be a significant predictor of depersonalisation and this explained 9.2% of the variance ($r^2=.092, p=.001$). Whilst controlling for ward based/non-ward based MHCPs, total stress ($\beta=.326, p\leq.001$) and acting with awareness ($\beta=-.322, p\leq.001$) were found to be significant predictors of depersonalisation and explained a further 25.8% of the variance ($r^2=.350, p\leq.001$). This suggested that higher levels of total stress significantly predicted higher levels of depersonalisation, and that higher levels of acting with awareness significantly predicted lower levels of depersonalisation.

Bootstrapping analyses confirmed the significant results for ward based/non-ward based MHCPs (CI -2.711 - -.190, $p=.019$), total stress (CI .022-.089, $p=.002$) and acting with awareness (CI -.478 - -.184, $p=.001$).

Discussion

Levels of Occupational Stress and Burnout amongst MHCPs in SHs

The study findings showed that the highest level of occupational stress in MHCPs employed in SHs was associated with service user challenging behaviour, and the least levels of occupational stress were associated with lack of staff support and home-work conflict. Elliott and Daley (2013) also found the same results in MHCPs employed in medium SHs in the UK. Furthermore, a concerning percentage of MHCPs employed in SHs reported high levels of burnout. Mean scores for personal accomplishment fell within the low burnout range, and mean scores for emotional exhaustion and depersonalisation both fell within the moderate burnout range. The study findings were consistent with previous research that found similar levels of burnout on the emotional exhaustion and depersonalisation subscales (Brooker & Whyte, 2001; Coffey, 1999; Elliott & Daley, 2013; Ewers et al., 2002; van Dierendonck et al, 1996).

Levels of personal accomplishment have been found to be inconsistent across existing studies. The low burnout levels of personal accomplishment found in this study were consistent with two previous studies that found comparable low levels in forensic mental health nurses and occupational therapists working in SHs (Ewers et al., 2002; Oddie & Ousley, 2007). In line with previous research, results from this study suggested that despite MHCPs employed in SHs experiencing moderate levels of emotional exhaustion and depersonalisation, they continued to retain a positive sense of personal accomplishment, and thus felt confident in performing their duties (Oddie & Ousley, 2007). Arguably these findings may be explained by social-desirability bias (Krumpla, 2013), as MHCPs may have underreported their work-related difficulties because they may have felt uncomfortable disclosing such sensitive issues in the research.

Levels of Occupational Stress and Burnout amongst MHCPs in SHs Compared with Other MHCPs

The study findings supported the hypothesis that MHCPs employed within SHs would report elevated levels of occupational stress compared with other groups of MHCPs. Significantly higher scores on all seven subscales of the SSQ were found, compared with staff working within intellectual disabilities services (Robertson et al., 2005). The significant differences were moderate in size for all subscales, with the exception of a big significant difference between groups for service user challenging behaviour. These findings are in line with previous research that found forensic MHCPs reported higher occupational stress levels than other professional groups (Banks et al., 1990; Jones et al., 1987) and other MHCPs (Elliott & Daley, 2013; Kirby & Pollock, 1995).

The study findings provided limited support for the hypothesis that MHCPs employed within SHs would report elevated levels of burnout compared with other groups of MHCPs. MHCPs employed within SHs had slightly significantly lower levels of personal accomplishment, therefore slightly higher burnout, compared with psychiatric nurses within mainstream mental health services (Happell et al., 2003). A similar pattern was observed for emotional exhaustion and depersonalisation, however, differences between groups were very small and were non-significant. The lack of substantial differences found between forensic and mainstream MHCPs may be explained by the premise that aggression displayed by service users is expected and tolerated as part of the treatment programme (Dickinson & Wright, 2008).

Dispositional Mindfulness in MHCPs in SHs and Maladaptive Coping, Occupational Stress and Burnout

The study findings supported the hypothesis that MHCPs employed in SHs that reported higher levels of dispositional mindfulness would report lower levels of maladaptive coping, occupational stress and burnout. Results indicated that lower levels of dispositional mindfulness were significantly associated with lower levels of personal accomplishment, and that higher levels of dispositional mindfulness were significantly associated with lower levels of maladaptive coping, occupational stress, emotional exhaustion and depersonalisation. However, it is important to note that significant effects were moderate in magnitude. These findings provided some support to existing research that found university students with high levels of mindfulness skills, were less likely to use maladaptive coping strategies and also reported lower levels of stress (Palmer & Rodger, 2009).

The findings that MHCPs employed in SHs reported higher levels of dispositional mindfulness and lower levels of occupational stress, provided some support for the premise that the attentional aspects of mindfulness may be related to the cognitive appraisal process of symptoms of stress (Salmon et al., 2004). Consistent with self-determination theorists (Brown & Ryan, 2003), it can be suggested that the attentional or self-regulation aspects of mindfulness helped lower the automatic stress-reactions of MHCPs employed in SHs. In turn, this process may have arguably lowered perceived levels of occupational stress and thus prevented burnout. Study findings also provided further support to existing research that demonstrated the effectiveness of mindfulness based interventions (MBIs) in reducing stress levels in HCPs (Irving et al., 2009).

Coping Strategies and Facets of Dispositional Mindfulness Predictive of Occupational Stress and Burnout in MHCPs in SHs

The study findings provided some support for the hypothesis that the psychological predictors, namely coping strategies and facets of dispositional mindfulness, would be predictive of occupational stress and burnout, whilst taking into account demographic variables and other aspects of work environments. Firstly, whilst controlling for adequate supervision and ward based/non-ward based MHCPs, higher levels of occupational stress significantly predicted higher levels of emotional exhaustion and depersonalisation. These findings were consistent with Elliott and Daley's (2013) results in a group of MHCPs employed within medium SHs in the UK.

Secondly, whilst controlling for adequate supervision and ward based/non-ward based MHCPs, higher levels of maladaptive coping significantly predicted higher levels of occupational stress and emotional exhaustion and lower levels of personal accomplishment. These findings provided some support to the premise that maladaptive coping strategies are likely to be associated with higher negative somatic health outcomes (e.g., chronic conditions, specific somatic symptoms) (Folkman et al., 1986). The study findings also provided support to previous research in MHCPs that found negative coping (Elliott & Daley, 2013) and maladaptive coping (Hastings & Brown, 2002) significantly predicted higher levels of emotional exhaustion (Devereaux et al., 2009; Hatton et al., 1995) and lower levels of personal accomplishment (Griffith et al., 2014).

Thirdly, whilst controlling for adequate supervision and ward based/non-ward based MHCPs, higher levels of the facet of mindfulness, acting with awareness, significantly predicted lower levels of emotional exhaustion and depersonalisation. These findings arguably suggested that attending to one's actions mindfully or acting with awareness may improve aspects of burnout compared with other facets of mindfulness, such as observing,

describing, non-judging of inner experiences and non-reacting to inner experiences. The study findings provided some support for theoretical perspectives on self-regulation and self-determination (Ryan & Deci, 2000). Brown and Ryan (2003) found that both dispositional and state mindfulness predicted self-regulated behaviour and positive emotional states in a sample of working adults. Therefore, it can be suggested that the mindfulness facet acting with awareness, may contribute to the function of self-regulation, and that these changes in self-regulation may help prevent burnout in MHCPs.

However, it is important to note that the items on the acting with awareness subscale on the Five Facet Mindfulness Questionnaire – Short Form (Bohlmeijer et al., 2011) included attention regulation and body awareness skills (e.g., ‘I find myself doing things without paying attention’) that were also required for the other facets of mindfulness. Holzel and colleagues (2011) proposed that self-regulation is enhanced via four mechanisms that occur during mindfulness meditation: 1) attention regulation; 2) body awareness; 3) emotion regulation; and 4) change in perspective in the self. This highlights the importance of individuals completing formal mindfulness practices that facilitate the development of attention regulation and body awareness skills (e.g. observing the physical sensations in the body), in order to further improve their ability to attend to their actions mindfully and act with awareness.

Fourthly, in relation to features of the working environment, receiving inadequate supervision was found to significantly predict slightly higher levels of occupational stress and emotional exhaustion. This suggested that MHCPs employed in SHs that did not perceive they received adequate levels of supervision, were more likely to experience occupational stress and emotional exhaustion. Furthermore, the study findings supported an existing study that found that clinical supervision, along with a psychological intervention training were

effective in reducing burnout in nurses and care workers employed in SHs and prisons (Stewart & Terry, 2014).

Critique, Clinical Implications and Future Research

A strength of this research study is that it included a heterogeneous sample of MHCPs, namely healthcare assistants, nursing staff, occupational therapists, psychologists, psychiatrists and social workers. Furthermore, some ward-based MHCPs had limited access to computers in SHs, therefore, an advantage of using a postal questionnaire design was that a large number of ward-based MHCPs, namely nursing staff and healthcare assistants participated in the study. Ward-based MHCPs have the most clinical contact with service users, therefore, the implementation of interventions to reduce occupational stress and prevent burnout could help improve quality of service user care (Coffey, 1999). A further strength, is that the study added helpful information to the literature relating to the underlying mechanisms of dispositional mindfulness, coping, occupational stress and burnout in MHCPs employed in SHs.

In terms of limitations, the study achieved a low response rate, and this arguably could limit the generalisability of the study findings to other MHCPs. Further limitations involved, firstly the absence of any information relating to those MHCPs that chose not to participate in the study; and secondly, those MHCPs that chose to participate in the study were arguably from a self-selected sample (e.g. highly motivated and/or highly stressed). Additional study limitations were also noted with the data analysis. Firstly, normative data was not available to compare occupational stress and burnout levels between MHCPs employed in SHs and other MHCPs, therefore, secondary data was used from two separate studies instead (Happell et al., 2003; Robertson et al., 2005). Consequently, the underlying distribution of the data was not known and differences between groups could not be

controlled for, and this, in turn could have influenced the research findings. Secondly, the use of the Bonferroni correction to account for multiple measurement may have led to the strongest statistical inferences being made, however, the technique has been criticised for its conservative nature, in particular if the number of tests are large (Bland & Altman, 1995). This, in turn could have led to an increased chance of ‘false negatives’ occurring and significant results not being found.

In relation to clinical implications, the study findings highlighted the importance of organisations being aware of the level of occupational stress and burnout prevalent amongst their employees and of investigating the underlying causes of their levels of distress. The study findings provided some support for the premise that MBIs could help MHCPs employed in SHs to lower their occupational stress levels and thus prevent burnout. This, in turn could help increase job satisfaction, improve level of service-user care and reduce staff turnover. More specifically, study findings highlighted that the attentional and self-regulation aspects of the mindfulness facet, acting with awareness, may help prevent emotional exhaustion and depersonalisation in MHCPs employed in SHs. The study findings highlighted the importance of MHCPs in SHs receiving adequate levels of supervision, and how this could lower levels of occupational stress and thus prevent burnout. This also suggests that interventions designed to reduce occupational stress and prevent burnout may need to address organisational factors (e.g., lack of supervision), along with individual factors (e.g., coping skills) to maintain longer-term improvements.

In relation to future research, comparative studies that do not rely on secondary data are needed to compare occupational stress and burnout levels amongst MHCPs employed in SHs and mainstream mental health services (Happell et al., 2003). Future research investigating the influence of personal (e.g. internal factors) and organisational (e.g. external factors) causes of occupational stress and burnout may also be useful, so that both internal

and external factors could be considered when designing interventions to target occupational stress and burnout amongst MHCPs employed in SHs. Based on the premise that the attentional and self-regulation aspects of the mindfulness facet acting with awareness may help prevent burnout in MHCPs employed in SHs, further research is required to replicate similar findings in professionals employed in other forensic services (e.g., prison services). In addition, further research investigating the role of different facets of mindfulness in the effectiveness of MBIs for psychological functioning in MHCPs would be beneficial, in particular to inform the future planning of interventions designed to lower occupational stress and prevent burnout in MHCPs employed in SHs.

Conclusion

Overall the study has showed that despite MHCPs employed in SHs exhibiting moderate levels of emotional exhaustion and depersonalisation, they continued to retain a positive sense of personal accomplishment, and thus felt able and confident in performing their duties. Higher levels of dispositional mindfulness were significantly associated with lower maladaptive coping, occupational stress and burnout levels, therefore, MBIs could prove to be a viable intervention to support MHCPs employed in SHs. The research also suggested that the attentional and self-regulation aspects of mindfulness involved in acting with awareness, may help prevent emotional exhaustion and depersonalisation in MHCPs employed in SHs.

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Table 1. Demographic and Health Related Information of Participants.

Demographic/Health Related Variable	Category	Percentage %	Mean (SD) Range
Age			40 years (10.55) 20-65 years
Gender	Male	41.1	
	Female	58.9	
Ethnicity	White British	88	
	White Other	7.3	
	Asian	2.7	
	Black	2	
Marital Status	Single	22.3	
	Married	46.6	
	Cohabiting	19.6	
	Divorced	8.1	
	Separated	2.7	
	Widowed	0.7	
Children	Yes	41.1	
	No	58.9	
Other Dependants	Yes	12.6	
	No	87.4	
Professional groups	Nursing staff	39.4	
	Healthcare assistants	28	
	Psychology	14	
	Occupational therapy	6.6	
	Psychiatry	6	
	Social work	4	
	Other therapists	2	
Length of Service in Current Workplace	Less than 5 years	46.7	1.88 (1.20)
	More than 5 years	22	7.15 (1.36)
	More than 10 years	16.7	11.00 (1.16)
	More than 15 years	14.6	18.00 (2.65)
Gender of Service Users Currently Work With	Males	80.8	
	Females	7.9	
	Mixed	11.3	
Shift Work	Yes	60.3	
	No	39.7	
Sick Leave (Last 6 Months)	Yes	38.4	3.69 days (11.86)
	No	61.6	0-100 days
Adequate Supervision	Yes	64.8	2.04 hours of supervision per month
	No	35.2	
Medication for Mental Health Problems	Yes	14.6	
	No	85.4	

Major Life Changes (Last 6 Months)	Yes	31.3	
	No	68.7	
Alcohol Units (Per Week)			8 units (9.37) 0-56 units
Cigarettes Smoked (Per Week)			12 (28.64) 0-140
Caffeinated Drinks (Per Day)			4.5 cups (3.01) 0-20 cups

Table 2. Cronbach Alphas for Assessment Measure Subscales

Measures and Subscales	Cronbach Alpha α	Level of Internal Consistency
SSQ		
Service User Challenging Behaviour	0.89	Acceptable
Service User Poor Skills	0.85	Acceptable
Lack of Staff Support	0.74	Acceptable
Lack of Resources	0.70	Acceptable
Low Job-Status	0.72	Acceptable
Bureaucracy	0.58	Use with caution
Work-Home Conflicts	0.70	Acceptable
Total Stress	0.94	Acceptable
MBI		
Personal Accomplishment	0.70	Acceptable
Emotional Exhaustion	0.90	Acceptable
Depersonalisation	0.70	Acceptable
BCI		
Adaptive Coping	0.89	Acceptable
Maladaptive Coping	0.84	Acceptable
FFMQ-SF		
Observing	0.87	Acceptable
Describing	0.83	Acceptable
Acting With Awareness	0.82	Acceptable
Non-Judging of Inner Experience	0.83	Acceptable
Non-Reactivity to Inner Experience	0.76	Acceptable
Total Mindfulness	0.82	Acceptable

Table 3. Normative MBI Scores for Mental Health Workers ($n=730$)

MBI subscales	Low Burnout	Moderate Burnout	High Burnout
Personal Accomplishment	≥ 34	33-29	≤ 28
Emotional Exhaustion	≤ 13	14-20	≥ 21
Depersonalisation	≤ 4	5-7	≥ 8

Reproduced from (Maslach et al., 1996; p. 6¹)

¹ Maslach, C., Jackson, S.E., & Leiter, M.P. (1996). *Maslach Burnout Inventory Manual, Third Edition*. California, USA: CPP Inc.

Table 4. Percentage Scores for Different Levels of MBI Burnout

Subscale	Low Burnout	Moderate Burnout	High Burnout
	%	%	%
Personal Accomplishment	57.6	21.9	20.5
Emotional Exhaustion	38.4	25.8	35.8
Depersonalisation	53.0	23.2	23.8

Table 5. Comparison of Occupational Stress and Burnout Levels with other MHCPs

Assessment Measures and Subscales	MHCPs in Secure Hospitals	Other MHCPS (Literature Findings)			Reference and Occupational Group
		Mean (SD)	<i>t</i> value	<i>p</i> value	
SSQ					
Service User Challenging Behaviour	11.09 (7.17)	2.02	15.50	.001*	Robertson et al., (2005)
Poor Service User Skills	4.76 (4.67)	1.88	7.84	.001*	Intellectual disability residential staff
Lack of Staff Support	3.39 (2.85)	2.18	5.22	.001*	(<i>n</i> =92)
Lack of Resources	5.68 (2.64)	2.41	15.24	.001*	SD not available
Low-Job Status	5.70 (4.21)	2.13	10.42	.001*	
Bureaucracy	4.05 (2.55)	1.77	10.99	.001*	
Home-Work Conflict	3.51 (2.95)	2.16	5.62		
MBI					
Personal Accomplishment	34.31 (7.15)	35.6 (9.8)	-2.22	.028*	Happell et al., (2003)
Emotional Exhaustion	18.18 (10.58)	17.4(12.2)	.905	.367	Mainstream mental health nurses (<i>n</i> =78)
Depersonalisation	4.93 (4.33)	4.5 (4.9)	1.23	.222	

$p \leq .05^*$

Table 6. Spearman's Correlation Coefficients between Coping, Total Dispositional Mindfulness Score and Occupational Stress and Burnout

Assessment Measures and Subscales	ρ Value	p Value
BCI	Total Mindfulness	
Adaptive Coping	-.045	.585
Maladaptive Coping	-.366	.001*
SSQ		
Total Stress	-.351	.001*
MBI		
Personal Accomplishment	.307	.001*
Emotional Exhaustion	-.393	.001*
Depersonalisation	-.261	.001*

$p < .001^*$

Table 7. Spearman's Correlation Coefficients (ρ) between Coping, Facets of Dispositional Mindfulness, Occupational Stress and Burnout

Measures and Subscales	SSQ Total Stress	MBI Personal Accomplishment	MBI Emotional Exhaustion	MBI Depersonalisation
SSQ Total Stress		-.295*	.634*	.400*
BCI Adaptive Coping	.265*	-.088	.277*	.146
BCI Maladaptive Coping	.463*	-.324*	.525*	.416*
FFMQ Observing	-.056	.100	.002	.071
FFMQ Describing	-.196	.230	-.093	-.049
FFMQ Acting With Awareness	-.243	.217	-.449*	-.394*
FFMQ Non-Judging	-.292	.105	-.308*	-.279*
FFMQ Non-Reactivity	-.144	.217	-.204	-.079

$p \leq 001^*$

Appendix I**Reminder Email to Participants**

Hello everyone,

My name is Sarah Angela Kriakous, Trainee Clinical Psychologist; I am currently in the third year of my clinical psychology training at Bangor University.

About a month ago you should have received an email from me about a piece of research that I am carrying out as part of my final year project, which is looking into the link between mindfulness, coping and occupational stress and burnout in mental healthcare professionals that work within secure hospitals in Wales. The research project will hopefully provide us with meaningful information about how we can best support mental healthcare professionals working in secure hospitals.

(Insert hospital name) is one of five secure hospitals in Wales that have agreed to take part in the research. Dr. Katie Ann Elliott (Consultant Clinical Psychologist) and Dr. Robin Owen (Clinical Psychologist) are supervising the research project and they are based at Ty Llywelyn Medium Secure Unit, North Wales. The research contact for the project at your hospital is *(Insert name) (insert job title)*.

To date we have received *(insert number)* questionnaires from the *(insert number)* questionnaires that were originally distributed a month ago.

We appreciate that mental healthcare professionals are very busy, both on and off the ward. This is a reminder email to encourage all mental healthcare professionals to complete the questionnaire pack that was sent to you via the internal mail system about a month ago. Your cooperation would be greatly appreciated. All questionnaires are anonymous so mental healthcare professionals are encouraged to be as open as possible.

It would be greatly appreciated if you could please return the completed questionnaire pack to me in the **freepost** envelope addressed to Bangor University.

If you have any queries regarding the research, please do not hesitate to contact me directly or contact your research contact *(insert name)* in the Psychology Department at your hospital.

Thank you again for your time and we look forward to receiving your questionnaires.

Sarah Angela Kriakous

Trainee Clinical Psychologist/Seicolegydd Clinigol Dan Hyfforddiant

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Appendix J

Rules for Missing Data

Measures and Subscales	Number of Items	Rules for Missing Data
SSQ		
Service User Challenging Behaviour	9	3
Service User Poor Skills	7	2
Lack of Staff Support	3	1
Lack of Resources	3	1
Low Job-Status	5	2
Bureaucracy	3	1
Work-Home conflicts	3	1
Total Stress	33	3
MBI		
Personal Accomplishment	8	3
Emotional Exhaustion	9	3
Depersonalisation	5	2
BCI		
Adaptive Coping	16	3
Maladaptive Coping	12	3
FFMQ-SF		
Observing	4	1
Describing	5	2
Acting With Awareness	5	2
Non-Judging of Inner Experience	5	2
Non-Reactivity to Inner Experience	5	2
Total Mindfulness	24	3

Appendix K

Managing Missing Data

Code Number	Measure	Subscales	Missing Item Number	Substituted Mean Value
36	MBI	Emotional Exhaustion	14	5.63
36	FFMQ	Describing	5	3.5 Recoded 2.5
48	SSQ	Bureaucracy	8	1
48	SSQ	Low Job-Status	17	1
53	FFMQ	Non-Reactivity	9	1.75
73	SSQ	Service User Challenging Behaviour	26	0.5
82	MBI	Emotional exhaustion	14	4.25
108	SSQ	Poor Service User Skills	4, 16	0.4
108	SSQ	Service User Challenging Behaviour	19	0.88
129	SSQ	Lack of Staff Support	12	1.5
129	SSQ	Service User Challenging Behaviour	18	0.63
135	MBI	Emotional Exhaustion	13	2
144	SSQ	Service User Challenging Behaviour	14	0.63
144	SSQ	Work-Home Conflict	15	1
153	SSQ	Poor Service User support	13	0.83
158	MBI	Personal Accomplishment	4	3.29
172	MBI	Depersonalisation	15	1.75
188	MBI	Emotional Exhaustion	13	0.75
193	SSQ	Bureaucracy	8	1
202	SSQ	Poor Service User Skills	4 5	0
215	MBI	Emotional Exhaustion	13	1.5
215	BCI	Adaptive Coping	2	1.8
227	MBI	Personal Accomplishment	4, 18	4.12
227	FFMQ	Non-reactivity	21	1.75
240	FFMQ	Acting With Awareness	8	1.75 Recoded 4.25
244	MBI	Depersonalisation	15	0
244	SSQ	Poor Service User	16	0.67

		Skills		
244	SSQ	Low Job-Status	20	0.25
264	MBI	Emotional Exhaustion	20	1.5
264	SSQ	Poor Service User	5	1
		Skills		
264	SSQ	Bureaucracy	8	1.5
266	MBI	Emotional Exhaustion	14	1.36
266	FFMQ	Non-Reactivity	18	3
267	BCI	Adaptive Coping	25	2.47
267	FFMQ	Non-Judging	7, 14	2
267	FFMQ	Acting With	8	1.5
		Awareness		Recoded 4.5
289	MBI	Emotional Exhaustion	13	4
289	BCI	Adaptive Coping	22	2.07
305	MBI	Personal	4	3.71
		Accomplishment		
305	BCI	Maladaptive Coping	16	1.13
308	SSQ	Service User	18	1.63
		Challenging		
		Behaviour		
316	SSQ	Poor user skills	5	0.5
357	MBI	Personal	7	3.71
		Accomplishment		
384	MBI	Emotional Exhaustion	14	0.25
384	SSQ	Poor Service User	4, 9	0.6
		Skills		
384	SSQ	Low Job-Status	17	0.75
449	SSQ	Poor Service User	4	2
		Skills		
473	BCI	Adaptive Coping	14, 15, 17, 18, 20, 22, 23, 24, 25, 27, 28.	Subscale items removed
473	BCI	Maladaptive Coping	13, 16, 19, 21, 26.	Subscale items removed
473	FFMQ	Observing	6, 10	Subscale items removed
473	FFMQ	Describing	1, 2, 5, 11	Subscale items removed
473	FFMQ	Non-Reactivity	3, 9	4
473	FFMQ	Non-Judging	4,7	0.6
				Recoded 5.4
473	FFMQ	Acting With	8	1.25
		Awareness		Recoded 4.75
494	MBI	Depersonalisation	10	1
494	SSQ	Lack of Resources	3	1.5
494	SSQ	Poor Service User	9	1.33
		Skills		
497	MBI	Emotional Exhaustion	2	1
497	MBI	Personal	4	4.14
		Accomplishment		Recoded 3.86

504	BCI	Adaptive coping	14, 15, 17, 18, 20, 22, 23, 24, 25, 27, 28.	Subscale items removed
504	BCI	Maladaptive coping	13, 16, 19, 21, 26.	Subscale items removed
504	FFMQ	Observing	6, 10	Subscale items removed
504	FFMQ	Describing	1, 2, 5, 11	Subscale items removed
504	FFMQ	Non-Reactivity	3,9	3.33
504	FFMQ	Non-Judging	4,7	2.33
504	FFMQ	Acting With awareness	8	Recoded 3.67 1.5 Recoded 4.5
522	SSQ	Work-Home Conflict	10	0
533	SSQ	Poor Service User Skills	4, 9	1
554	MBI	Emotional Exhaustion	20	1.5
554	SSQ	Poor Service User Skills	6	0
555	BCI	Adaptive Coping	17, 18, 20, 22, 23, 24, 25, 27, 28.	Subscale items removed
555	BCI	Maladaptive Coping	19, 21, 26	0.75
591	SSQ	Lack of Staff Support	27	0.5
662	MBI	Personal Accomplishment	4	2.86
662	SSQ	Poor Service User Skills	5, 16	1.4
662	FFMQ	Non-Judging	7	2.5 Recoded 3.5
667	BCI	Maladaptive Coping	6	1.64

Appendix L

Managing Outliers

Measure	Subscale	Code Number	Item Value	Highest Subscale Score	Adjusted Item Value
MBI	Emotional Exhaustion	36	50.63	44	45
MBI	Emotional Exhaustion	219	52	44	45
MBI	Emotional Exhaustion	584	47	44	45
MBI	Depersonalisation	27	18	15	16
MBI	Depersonalisation	219	24	15	16
MBI	Depersonalisation	507	19	15	16
MBI	Depersonalisation	666	18	15	16
BCI	Maladaptive Coping	277	38	35	36
FFMQ	Describing	74	6	10	9
FFMQ	Describing	207	5	10	9
FFMQ	Describing	268	8	10	9
FFMQ	Describing	554	7	10	9

Section Five
Contributions to Theory and
Clinical Practice

**Contributions to Theory and
Clinical Practice**

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Introduction

The current literature review provided further insight into the effectiveness of Mindfulness Based Stress Reduction (MBSR; Kabat-Zinn, 1982) programmes on the psychological functioning of healthcare professionals (HCPs). The current research study provided valuable information into the role of coping and dispositional mindfulness upon occupational stress and burnout amongst mental healthcare professionals (MHCPs) employed within secure hospitals (SHs). Implications to theory, clinical practice and future research will be considered, along with a reflective commentary regarding the process and personal issues the researcher encountered from conducting the research.

Implications for Future Research and Theory Development

The main findings from the current literature review and current research study will be discussed in relation to implications for theories for coping, occupational stress, burnout and mindfulness. Implications for future research will also be considered.

Literature Review Findings

The literature review findings highlighted that MBSR was effective in improving anxiety, depression, rumination, stress and increasing self-compassion. MBSR also proved to be effective in increasing overall levels of mindfulness. These findings provided some support for Shapiro, Carlson, Astin and Freedman's (2006) model of mindfulness and the concept of reperceiving, which involves an individual's ability to observe their thoughts and feelings with greater clarity. This is because the current literature review findings relating to MBSR effects on stress and related psychological problems (e.g., anxiety and depression),

suggested that the process of reperiencing may have reduced the power of the stress reaction (Kabat-Zinn, 2013) in HCPs. Consequently, this process may have led to HCPs employing more adaptive, effective coping strategies, which in turn may have reduced levels of stress.

With regards to the specific facets of mindfulness, the current literature review found that MBSR was less effective in improving some of the facets (e.g., describing and acting with awareness) compared to other facets (e.g., observing, and non-judgement and non-reactivity to inner experiences). These findings could be attributed to the premise that the mindfulness facet acting with awareness may take longer to develop than other facets of mindfulness, therefore, the completion of MBSR programmes may be less likely to result in improvements in acting with awareness. Furthermore, Shapiro et al. (2006) highlighted that reperiencing leads to the mechanism of self-regulation, and this then results in the use of adaptive coping strategies and reductions in stress. Future research is required into the facets of mindfulness that are included in MBSR programmes (e.g., acting with awareness) which may facilitate the process of self-regulation and subsequent reductions in levels of stress.

However, the current literature review findings showed that MBSR programmes were not as effective in reducing burnout or increasing resilience in HCPs. The findings relating to resilience, however, need to be treated with caution because only two studies from the current literature review examined this aspect of psychological functioning. These findings may be attributed to the premise that burnout is a psychological problem that may take longer to recover from than other psychological problems such as anxiety, depression and stress (Manotas, Segura, Eraso, Oggins, & McGovern, 2014). Furthermore, in the available burnout literature there is no clear differentiation between interventions designed to prevent burnout, and those created to help professionals recover (Morse, Salyers, Rollins, Monroe-DeVita & Pfahler, 2012). Burnout has been conceptualised along a continuum (Morse et al., 2012), which may explain why currently, there is a lack of specificity relating to burnout

interventions in the literature. Further research into burnout interventions would benefit from greater clarity and specification to help inform intervention planning (Morse et al., 2012).

According to the Quality Assessment Tool for Quantitative Studies (Effective Public Health Practice Project, 1998), most of the research studies included in the current literature review were of a weak to moderate quality. Many of the studies had methodological limitations relating to small sample sizes, self-selected samples and over-representation of Caucasian women. Several of the studies lacked randomisation, blinding procedures and control groups, and only one study included a treatment comparison (e.g., leadership course) to MBSR (Pipe, Bortz, & Duek, 2009). Further research needs to endeavour to use more robust study designs (e.g., randomised controlled trials), include bigger sample sizes and achieve heterogeneous samples. In addition, the effectiveness of MBSR programmes may benefit from being compared with other psychological interventions designed to improve psychological functioning in MHCPs in different mental health settings (e.g., SHs).

Research Study Findings

Levels of Occupational Stress and Burnout amongst MHCPs in SHs Compared with Other MHCPs

Findings from the current research study demonstrated that MHCPs reported elevated levels of occupational stress, that levels of emotional exhaustion and depersonalisation both fell within the moderate burnout range and personal accomplishment fell within the low burnout range. These findings provided some support to Lazarus and Folkman's (1984) Cognitive Appraisal Theory, because MHCPs experiences of coping and stress may be influenced by their cognitive appraisal of situations as potentially harmful and/or threatening, and this, in turn may have contributed to the reported elevated levels of occupational stress

and burnout (e.g., emotional exhaustion and depersonalisation). Furthermore, Maslach et al's (1996) model of burnout highlighted that emotional exhaustion and depersonalisation were highly correlated, this may explain why previous research and the current study found similar levels of burnout for emotional exhaustion and depersonalisation in MHCPs in SHs (Brooker & Whyte, 2001; Coffey, 1999; Elliott & Daley, 2013; Ewers, Bradshaw, McGovern, & Ewer, 2002; van Dierendonck, Schaufeli & Buunk, 1996).

The current research study showed that MHCPs employed within SHs reported significantly slightly higher levels of stress than MHCPs employed within learning disability services (Robertson et al., 2005). However, the lack of substantial differences found in burnout levels between MHCPs employed in mainstream services (Happell, Martin, & Pinikahana, 2004) and those employed in SHs in this study proved surprising. This was due to the assumption that MHCPs employed within SHs were more likely to experience burnout due to working with service users with complex and enduring mental disorders (Savicki & Cooley, 1987), who have committed criminal offences and who often exhibited an increased risk of challenging and aggressive behaviours compared with service users in other mental health services (Mason, 2002).

Contrary to the assumption that SHs are associated with increased burnout, Happell et al. (2003) found that mainstream mental health nurses reported higher burnout for emotional exhaustion, depersonalisation and personal accomplishment than forensic nurses. Researchers have previously argued that aggression displayed by service users in SHs is generally expected, and often tolerated as part of the treatment programme (Dickinson & Wright, 2008), which could explain why the current research study found burnout levels were lower than anticipated in MHCPs employed in SHs. This research finding provided further insight into differences in occupational stress and burnout levels between different groups of MHCPs.

Future research investigating occupational stress and burnout levels between mainstream and forensic MHCPs, are encouraged to use primary rather than secondary data so that the underlying distribution of the data for both samples is known, and differences between groups can be controlled.

Dispositional Mindfulness in MHCPs in SHs and Maladaptive Coping, Occupational Stress and Burnout

The present study showed that MHCPs employed in SHs that reported higher levels of dispositional mindfulness, also reported lower levels of maladaptive coping, occupational stress and burnout. The current research suggested that the attentional aspects of mindfulness may be related to the cognitive appraisal process of symptoms of stress (Salmon et al., 2004). Lazarus and Folkman's (1984) Cognitive Appraisal Theory of coping and stress highlights that coping responses are instigated by a cognitive appraisal of events as challenging, harmful and/or threatening. Therefore, it could be argued that MHCPs experiences of coping and stress are influenced by the attentional aspects of mindfulness, which, in turn may lower the perceived threat of challenging and/or potentially threatening situations that occur within SHs (e.g., service users swearing at MHCPs).

Coping Strategies and Facets of Dispositional Mindfulness Predictive of Occupational Stress and Burnout in MHCPs in SHs

The research study found that when adequate supervision and ward based/non-ward based MHCPs were accounted for, higher levels of maladaptive coping significantly predicted higher levels of occupational stress and emotional exhaustion and lower levels of personal accomplishment. These findings reinforced that maladaptive coping responses were associated with negative health outcomes, namely occupational stress and burnout. Elliott &

Daley (2013) demonstrated that higher emotional exhaustion levels were found amongst MHCPs employed in medium SHs who consumed more alcohol, and higher depersonalisation levels amongst those who smoked. They argued that MHCPs employed in medium SHs with higher levels of burnout employed palliative, more avoidant coping strategies (e.g., heavy smoking and excessive alcohol consumption). In order to help build on existing coping theories and develop interventions designed to target occupational stress, research investigating the types of coping strategies employed in MHCPs within SHs would be of benefit in the future.

The present study also showed that when adequate supervision and ward based/non ward-based MHCPs were taken into account, a higher level of acting with awareness significantly predicted lower levels of emotional exhaustion and depersonalisation. Interestingly, the other facets of mindfulness, namely observing, describing and non-judging of inner experiences and non-reacting to inner experiences were not found to be significant predictors of burnout. The current study findings provided some support for self-determination theorists (Brown & Ryan, 2003) because the attentional and self-regulation aspects of mindfulness (e.g., acting with awareness) may have 1) helped lower the automatic stress-reaction in MHCPs in SHs, and 2) lowered their perceived levels of stress and subsequent experiences of burnout. The present study has contributed to existing Self-Determination Theories (Brown & Ryan, 2003), because the findings suggested that acting with awareness may play a contributory role in the process of self-regulation.

The current study also demonstrated that higher levels of occupational stress significantly predicted higher levels of burnout (e.g., namely emotional exhaustion and depersonalisation), and that higher levels of acting with awareness significantly predicted lower levels of emotional exhaustion and depersonalisation, however, this was not the case for personal accomplishment. It could therefore be proposed that higher levels of acting with

awareness may play a moderating role in reducing the adverse effects of occupational stress on burnout (e.g., emotional exhaustion and depersonalisation) in MHCPs employed in SHs. This proposed process is illustrated in Figure 1.

Insert Figure 1

The proposed model suggested that higher levels of acting with awareness may lower the negative effects of occupational stress, and consequently this process may lower vulnerability to developing burnout, namely emotional exhaustion and depersonalisation, amongst MHCPs employed in SHs. However, the proposed moderating effects need to be empirically tested in future research, because if the proposed model is accurate then acting with awareness could be a possible strategy in lowering the adverse effects of occupational stress and preventing burnout (e.g., emotional exhaustion and depersonalisation) in MHCPs employed in SHs.

Implications for Clinical Practice

The main findings from the current literature review and current research study will be discussed in relation to implications for clinical practice, namely managing occupational stress and burnout amongst MHCPs employed in SHs and the design and implementation of Mindfulness Based Interventions (MBIs).

Literature Review Findings

The current literature review produced helpful findings into additional variables that had not been fully explored in previous reviews of MBIs in HCPs. These variables included

1) MBSR programme duration; 2) MBSR instructor experience and treatment integrity; 3) mindfulness home practice and 4) MBSR participant incentives. The findings from the current literature review highlighted a range of implications for clinical practice relating to the design and implementation of MBIs and MBSR programmes for HCPs.

MBSR Programme Duration

Similar to previous research, the literature review reinforced the findings that briefer MBSR programmes (e.g., 4-7 weeks) were just as effective as the traditional eight-week MBSR programmes. However, MBSR programmes that were delivered in fewer than three weeks were also found to produce positive outcomes for HCPs' psychological functioning, namely anxiety, depression, burnout and stress (Ando, Natsume, Kukihara, Shibata, & Ito, 2011; Fortney, Luhterhand, Zakletskaia, Zgierska, & Rakel, 2013; Hallman, O'Connor, Hasenau, & Brady, 2014).

Three of the studies included in the current literature review that delivered abbreviated MBSR programmes in four weeks or less were conducted within inpatient psychiatric hospitals (Brady, O'Connor, Burgermeister & Hanson., 2012; Hallman et al., 2014) and in an elderly hospital ward (Ando et al., 2011). All three studies found significant findings for different psychological problems, namely, reductions in stress (Brady et al., 2012; Hallman et al., 2014), anxiety and depression (Ando et al., 2011). Improvements were also observed for burnout but these were not found to be significant (Brady et al., 2012).

The current literature review findings, therefore, suggested that briefer MBSR interventions may be a viable option for MHCPs employed within SHs, because they appeared to have positive treatment outcomes, and could prove to be more accessible to a staff group that may already find it difficult to attend training sessions due to time and

staffing restrictions (Shapiro et al., 2008). These assertions need to be treated with caution as further research is required to investigate the effectiveness of MBIs and MBSR programmes on psychological functioning in MHCPs employed within SHs. Further research is also required to establish whether there is a minimal effective amount of MBSR that may alleviate stress and related problems amongst MHCPs, which in turn could help inform future intervention planning (Smith, 2014).

MBSR Instructor Experience and Treatment Integrity

The current literature review findings suggested that instructor experience may not influence treatment effectiveness of MBSR programmes on psychological functioning in HCPs, as MBSR instructors delivered interventions in research studies that produced both significant and/or non-significant findings. In addition, only one study included in the current literature review reported that programme fidelity was checked by MBSR instructors after each session (deVibe et al., 2013). These findings suggested that the competency levels of MBSR instructors and the systematic evaluation of training sessions (e.g., via video recordings of sessions) is required, in order to ensure quality of care and maintain the programme integrity of MBSR programmes.

MBSR Mindfulness Home Practice

The literature review findings also showed that mindfulness home practice was associated with improvements in mental distress (deVibe et al., 2013), stress and burnout (Bazarko, Cate, Azocar & Kreitzer, 2013). However, previous research has highlighted that practicing mindfulness outside of the MBSR sessions can prove particularly difficult for people, especially remaining disciplined and motivated to complete the home practices

(Erogul, Singer, McIntyre & Stefanov, 2014). Furthermore, Brady et al. (2011) explored barriers to meditating daily in MHCPs in an acute psychiatric unit. A thematic analysis of the data demonstrated that barriers included: 1) mindfulness practices were not placed on a calendar; 2) MHCPs were preoccupied with other things; and 3) MHCPs were pressured to get involved with family and other people once returning home from work. Thus in light of the current literature review findings which have demonstrated the importance of mindfulness home practice, briefer exercises may prove accessible for HCPs and could result in further improvements in psychological functioning. Further research is clearly required to investigate the quality and quantity of mindfulness home practice.

MBSR Participant Incentives

The use of incentives to help increase MHCPs engagement in MBSR programmes in inpatient psychiatric hospitals have been attempted in previous research studies (Brady et al., 2012; Hallman et al., 2014). The current literature findings suggested that such incentive programmes have been rather unsuccessful due to the demands of hospital regimes placed upon MHCPs. In order to maximise the effectiveness of MBIs and MBSR programmes for improving psychological functioning in MHCPs employed in SHs, recommendations for best practice regarding how MBIs and MBSR programmes can be successfully implemented in SHs are required.

Research Study Findings

The findings from the current research study generated a range of clinical implications in relation to managing occupational stress and burnout amongst MHCPs employed in SHs. In addition, a variety of clinical implications were also generated for the design and

implementation of Mindfulness Based Interventions (MBIs) in reducing occupational stress and preventing burnout in MHCPs employed within SHs.

Managing Occupational Stress and Burnout amongst MHCPs in SHs

The current research study demonstrated that MHCPs employed within SHs displayed elevated levels of occupational stress. The factors that MHCPs employed within SHs reported as causing them the most occupational stress included, service user's challenging behaviour, poor service user's skills, lack of resources and low-job status. Elliott and Daly (2013) found that the same four factors also caused the most occupational stress in a sample of MHCPs employed in medium SHs in the UK. Oddie and Ousley (2007) found that limited resources and staff conflict were associated with occupational stress and burnout in mental health nurses and occupational therapists employed within a medium SH. Findings from the present study supported existing research which concluded that MHCPs employed in SHs found certain occupational factors particularly stressful, this, in turn highlighted that occupational stress interventions need to address both occupational and individual factors.

Despite the premise that emotionally challenging and stressful situations are accepted as an inherent part of working in SHs (Dickinson & Wright, 2008); the present study demonstrated that a concerning percentage of MHCPs employed in SHs reported high levels of burnout. Burnout has previously been found to be associated with a variety of mental (e.g., anxiety, depression, impaired memory and sleep problems) and physical (e.g., neck and back pain) health problems in professionals from different occupational groups (Peterson et al., 2008). Previous research has also demonstrated that burnout amongst employees can have a range of negative consequences for organisations. For example, financial costs relating to staff sickness and high staff turnover (Medland, Howard-Ruben & Whitaker, 2004; Wright, 2005), reduced quality of service-user care (Coffey, 1999) and decreased job satisfaction

(Aiken, Clark, Sloane, Sochalski & Silber, 2002). Therefore, the current research findings highlighted the importance of organisations being aware of the level of burnout prevalent amongst their employees and of investigating the underlying causes of their levels of distress.

The current research findings also suggested that despite MHCPs employed in SHs experiencing moderate levels of burnout, they also retained some positive personal accomplishment, and thus continued to feel confident in performing their duties. This research finding may lend support to Maslach and colleagues (2006) who argued that depersonalisation appeared to be related to the experience of emotional exhaustion, and that depersonalisation slowly developed as a means of reducing levels of emotional energy necessary to work with service users. Thus organisations need to be aware of, and investing heavily in, the occupational factors that help to maintain positive personal accomplishment amongst MHCPs employed within SHs. Further research to investigate how personal accomplishment differs as a construct in comparison to the two other components of burnout (e.g., emotional exhaustion and depersonalisation) would also prove beneficial.

Mindfulness Based Interventions for Occupational Stress and Burnout

The current research study demonstrated that higher levels of acting with awareness was a significant predictor of lower levels of burnout (e.g., emotional exhaustion and depersonalisation). This finding suggested that acting with awareness may prevent components of burnout, namely emotional exhaustion and depersonalisation, compared with other facets of mindfulness, such as observing, describing, non-judging of inner experiences and non-reacting to inner experiences amongst MHCPs in SHs. This finding suggests that the mindfulness facet acting with awareness may contribute to the function of self-regulation, and that changes in self-regulation may help prevent burnout in MHCPs employed in SHs.

However, it is important to note that the mindfulness facet acting with awareness also includes attention regulation and body awareness skills that are used in the other facets of mindfulness (e.g., observing, describing, non-judging of inner experiences and non-reacting to inner experiences). Holzel and colleagues (2011) proposed that self-regulation skills are enhanced through mechanisms of mindfulness such as attention regulation and body awareness. This suggests the importance of individuals completing formal mindfulness practices that facilitate the development of the attentional aspects of mindfulness (e.g., observing the physical sensations in the body), in order to further enhance their ability to attend to their actions mindfully and act with awareness.

Formal mindfulness practices included in MBSR programmes that involve attending to one's actions mindfully and acting with awareness are mindful walking and Hatha Yoga postures and stretches (Kabat-Zinn, 2005). Attending to one's actions can also comprise of informal mindfulness exercises, including acting with awareness in daily activities (e.g., brushing teeth and washing dishes) and engaging in physical activities and/or hobbies (e.g., drawing, sewing, running and swimming). Based upon the current research findings, it can be suggested that arguably, completing formal and informal mindfulness practices that involve the use of attentional and self-regulation skills could help prevent burnout (e.g., namely emotional exhaustion and depersonalisation) amongst MHCPs employed within SHs.

Previous researchers have highlighted that intervention strategies designed to address occupational stress and burnout have predominantly targeted either change in the individual employees (e.g., internal factors) or change in the employees work environment (e.g., external factors) (Morse et al., 2012). Fundamentally, MBIs and MBSR programmes have been specifically designed to target peoples' coping skills specifically. Thus it can be questioned whether MBIs or MBSR programmes are effective in reducing occupational stress and preventing burnout in the long-term, if external work stressors continue to be present

(e.g., excessive workload, lack of resources and role ambiguity). Awa et al. (2010) concluded that significant improvements in burnout achieved from individually targeted interventions were not present six to twelve months post-intervention, with the exception of programmes that also included booster sessions (e.g., refresher sessions on adaptive coping post-intervention). Arguably further research is called for to investigate whether MBIs that included booster sessions achieved more effective treatment outcomes, than interventions that did not.

However some researchers have criticised individually targeted burnout interventions and have highlighted that organisational factors (e.g., excessive workload, lack of resources and role ambiguity and conflict) are often antecedents to burnout, and should be targeted in interventions (Morse et al., 2012). Dickinson and Wright (2008) highlighted a number of recommendations that could help to reduce occupational stress and prevent burnout in forensic mental health nurses, these included: 1) clinical supervision; 2) openness and honesty with managers; and 3) for staff to rotate wards to facilitate personal and professional development. Similarly, the current study findings showed that inadequate supervision significantly predicted higher occupational stress and emotional exhaustion levels in MHCPs employed in SHs. The findings arguably suggested that MBIs and MBSR programmes may prove to be more effective for longer, if both external organisational factors (e.g., lack of supervision) and individual internal factors (e.g., coping skills) are addressed. Again further research is called for to investigate whether MBIs and MBSR programmes addressing both external and internal factors achieve more effective treatment outcomes, than interventions that did not.

Reflective Commentary

A reflective commentary relating to the researcher's experiences of conducting the research will be discussed. This will refer to the researcher's motivations for the research study, and the process and personal issues the researcher encountered whilst conducting the research.

Motivations for the Research Study

One of my motivations to complete this research project was based on my passion for forensic mental health. I initially completed a Masters in Applied Forensic Psychology at York University in 2004. I then worked in the HM Prison Service and within low and medium SHs. During this time my interest in how people coped with emotionally challenging situations began. My Masters research investigated the role of coping styles, emotional control and emotional behaviour in suicidal behaviour in young offenders. My clinical experience then highlighted that the role of MHCPs within forensic inpatient settings (e.g. prisons and SHs) can be exciting and incredibly rewarding, yet also emotionally challenging and stressful. With this in mind, I was aware that there appeared to be a lack of interventions in place to help promote staff coping and wellbeing, despite there being such high levels of staff sickness and absenteeism within forensic inpatient settings.

I was first introduced to mindfulness from a Dialectical Behaviour Therapy (DBT; Linehan, 1993) framework whilst working within a medium SH. My knowledge of mindfulness then developed from reading about and practising meditation from a Buddhist perspective. I then completed the MBSR course at the Centre for Mindfulness Research and Practice, Bangor, as part of my first year of clinical psychology training. This further developed my knowledge of mindfulness and how I could apply it in my clinical practice with service users. I also gained many personal benefits from employing mindfulness skills in

my daily life. This, in turn prompted the idea that MBIs could be a viable intervention for MHCPs employed in SHs to help reduce occupational stress and prevent burnout.

Process and Personal Issues

An initial challenge of conducting the current research involved attending the NHS Wales Research Ethics Committee (REC) meeting. I found this to be an anxiety provoking experience as I was not sure of what to expect. In hindsight, I felt that I answered the questions asked by the panel in a defensible manner. A further challenge was the uncertainty that I experienced with regards to which hospitals would agree to participate in the research. Consequently, I experienced some worries relating to ensuring that I had a sufficient sample size for the research study. The biggest challenge and most frustrating aspect of conducting the current research study was the process of recruiting SHs across the private sector and four different health boards in Wales. All five SHs had different research protocols and authorising processes to overcome, which at times were unclear and very time-consuming.

The next biggest challenge was the coordination of the research project amongst the five different SHs. There was a lot of correspondence with the research contacts at each site. This ranged from the submission of the Site Specific Information Forms to Research and Development Departments, to obtaining all the relevant information to prepare the postal research packs for each site. A lesson learnt from conducting this research with a postal questionnaire design, was that it would have been more effective to have recruited from larger research sites. This is because a higher return of questionnaires is expected from bigger research sites, and the fewer sites recruited the less coordination and correspondence required.

Completing the research study has been an interesting and rewarding experience, as I have learnt a lot from the MHCPs that participated in the study and from both

my research supervisors. I felt that I demonstrated good organisational skills in order to manage the competing demands of completing a multi-site study. However, there were aspects of the research process that proved to be emotionally challenging. At these times I sought support from family and friends. I also engaged in physical exercise, namely walking and mountain biking, and I attempted to engage in these activities mindfully. The findings from the current research study have reinforced my initial thoughts that MBIs could be an effective intervention in reducing stress and preventing burnout in MHCPs in SHs. Since I started this research I have observed an increase in MBIs available for MHCPs that work within mainstream mental health services, this is promising, and I hope to see this develop across more specialised areas of mental health (e.g., forensic inpatient settings).

Conclusion

The current literature review demonstrated that MBSR proved to be effective in reducing anxiety, depression, trait anger, rumination, stress and increasing mindfulness and self-compassion. However, MBSR does not appear to be as effective in reducing burnout and improving resilience. Findings relating to resilience, however, need to be treated with caution because only two studies in the current literature review examined this aspect of psychological functioning. The current literature review highlighted that MBSR was an effective intervention in improving psychological functioning in HCPs. However, better quality studies with more robust study designs, which also have bigger samples sizes, heterogeneous samples and active comparison interventions are required.

The current research study provided helpful findings into the role of coping and dispositional mindfulness upon occupational stress and burnout in MHCPs employed in SHs. The research findings demonstrated that higher levels of dispositional mindfulness were significantly associated with lower levels of maladaptive coping, occupational stress and

burnout in MHCPs employed in SHs. In addition, higher levels of occupational stress were found to significantly predict higher levels of burnout (e.g., namely emotional exhaustion and depersonalisation) and higher levels of acting with awareness were found to significantly predict lower levels of emotional exhaustion and depersonalisation. The possible moderating effects of higher levels of acting with awareness on the relationship between occupational stress and burnout (e.g., emotional exhaustion and depersonalisation) were also explored, although the viability of this hypothesis needs to be rigorously tested in future empirical research.

The current research study also highlighted that the attentional and self-regulation aspects involved in acting with awareness, may arguably prove to be effective in preventing burnout, namely emotional exhaustion and depersonalisation, in MHCPs employed in SHs. The importance of completing formal and informal mindfulness practices to develop the necessary attentional and body awareness skills was also highlighted, and this, in turn could lead to improvements in self-regulation. Arguably, these changes in self-regulation could help prevent components of burnout in MHCPs employed in SHs. The findings from the current literature review demonstrated that briefer MBSR programmes, along with briefer mindfulness home practices, may prove to be a more effective and less costly way of implementing MBSR interventions to help reduce occupational stress and burnout in MHCPs in SHs.

However, the current research study also showed that receiving inadequate supervision was a significant predictor of higher levels of occupational stress and emotional exhaustion levels. This suggested that occupational stress and burnout interventions need to address both individual factors (e.g., coping strategies) and organisational factors (e.g., lack of supervision), to ensure that occupational stress and burnout are successfully managed in the long-term amongst MHCPs employed within SHs.

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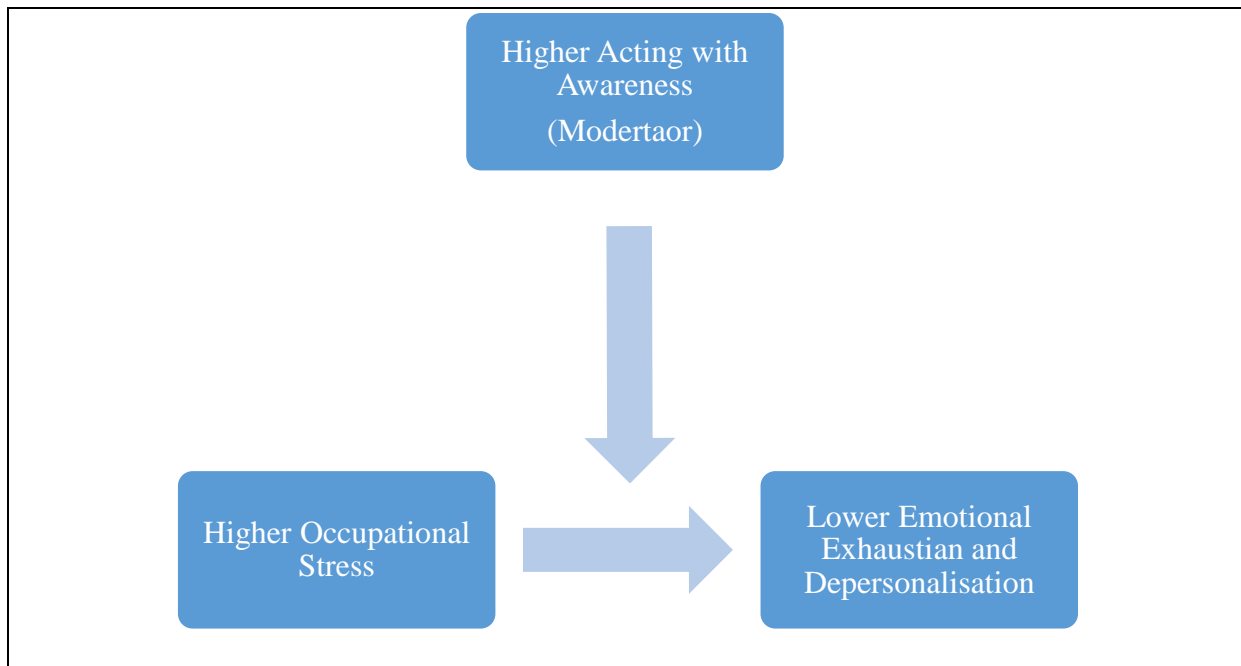
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Figure 1. Proposed moderating effects of acting with awareness on the relationship between occupational stress and burnout



Section 6
Word Counts

Word Counts

Title	14
Abstract	309
Literature Review	7922
References, Figure and Tables	5221
Research Paper	7518
References, Tables and Appendices	3359
Contributions to Theory, Clinical Practice and Learning	4932
References and Figures	1083
Total	20695
(Including title and thesis abstract)	
(Excluding references, figures, tables and appendices)	
Total	9663
(References, figures, tables and appendices)	
Overall Total	30358