Navigating practice research: An exploration of psychotherapist attitudes to evidence-based practice and post-qualification research activity in UK clinical psychologists

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Doctorate in Clinical Psychology

University of East Anglia

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Submission Year: 2024

Word count: 23377

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Material submitted by the candidate previously for the summative assessment 'ClinPsyD Thesis Proposal' has been used throughout this work.

Thesis Portfolio Abstract

Background: The scientist-practitioner model is an important facet of the identity of clinical psychologists and other psychological disciplines. It was first introduced in 1949, designed to bridge the gap between research and practice in clinical psychology. Seventy years later, and after many empirical advancements and changes in the role of a clinical psychologist, this body of work aims to update the picture of clinical psychologists as researcher-practitioners.

Methods: The portfolio comprises of two complementary papers. Firstly, a systematic review comprising of nine studies investigates attitudes of psychotherapists to evidence-based practice. Secondly, an empirical paper seeks to understand the range of research related activities in which UK clinical psychologists (*N* = 159) are involved, as well as the factors associated with this and barriers to future activity.

Results: The systematic review paper found that attitudes of psychotherapists to evidence-based practice were broadly positive. Commonly endorsed attitudes included evidence-based practice being beneficial for clients, improving overall practice, and improving quality of service. The empirical paper found that all clinical psychologists reported carrying out at least one research related activity in the past year with a mean number of 7.82 activities conducted. In addition, a regression model indicated that attitudes, gender, self-efficacy, resources, and support were significant predictors of level of research activity. Lastly, time and resources were the most reported barriers and facilitators to research related activity.

Conclusion: The integrated findings of the two papers indicate that attitudes towards evidence-based practice are positive and that clinical psychologists are utilising their research skills in clinical practice via research related activities. However, there remains many barriers and potential facilitators to future research related activity.

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Acknowledgements

Firstly, thank you to my research supervisors Dr Jo Hodgekins and Dr Sarah Reeve. Your ongoing support, knowledge, and encouragement throughout the past three years have been invaluable. Thank you also to my personal advisor Dr Imogen Rushworth for your advice, support, and good humour.

My thanks also to the NHS for their continued funding of clinical psychology training courses. I appreciate your investment in mental health and me; I hope to realise this investment in using the skills I have developed in research and practice to contribute positively, in some small part, to the lives of the UK population.

Thank you to all of the clinical psychologists who took the time to contribute their responses to my empirical project.

Thank you also to my partner, family, and friends. Thank you for the distractions, support, and tolerating my frequent physical and mental absences.

Lastly thank you to my fellow cohort of clinical psychology colleagues for the laughs, tears, and everything in between that comes with supporting each other through these three years.

Chapter One

Introduction

Word count: 634

This chapter presents a brief overview of the history and reception of the scientist-practitioner model, a key tenet in the role and training of clinical psychologists. It then goes on to outline the body of work.

The scientist-practitioner: A brief history

The scientist-practitioner model was first unveiled at the Boulder Conference on Graduate Education in 1949. The primary tenet of the model was that clinical psychology training should place equal emphasis on research and practice components, thus 'bridging the gap' between evidence and practice (Jones & Mehr, 2007). As a result of the implementation of this training ethos, clinical psychologists should be capable of both producing research and integrating it to inform their clinical practice (Corrie & Callanan, 2001). This involves not just formal processes such as consumption of research but also an approach to clinical work in the spirit of scientific enquiry.

Closely linked to the scientist-practitioner model is the concept of evidence-based practice (EBP), a process of clinical decision making which integrates research with clinical expertise, experience, and client preferences (APA Presidential Task Force on Evidence-Based Practice, 2006).

EBP and the scientist-practitioner approach are important in terms of practice quality, outcomes, and resource allocation (Daleiden et al., 2006; Huppert et al., 2006; Pope, 2003). Research evidence can help to clarify what treatments are efficacious under scientific conditions thus minimising bias and mitigating the use of unscientific interventions (Jonsson & Bouvy, 2018; Lilienfeld et al., 2003). The need to integrate research into clinical work has also been highlighted in many other health professions such as psychiatry (Wallace, 2011), nursing (Youngblut & Brooten, 2001), social work (Soydan & Palinkas, 2014), and occupational therapy (Bennett & Bennett, 2000). Additionally, the World Health Organisation (2001) have also asserted the need for research integration and EBP in mental health services.

However, the viability of the scientist-practitioner model in the psychological professions has been questioned since its inception regarding how realistic it is for clinical psychologists to act as both researcher and clinician. Historic criticisms have largely centred on practical considerations and the inclination of practitioners to be interested in both research production and clinical work (Frank, 1984). Recent focus has been on the gap between research and practice and how this bi-directional chasm can be narrowed (Teachman et al., 2012). The scientist-practitioner model's inception was 75

years ago at a time when modern clinical psychology was in its infancy, particularly in terms of the empirical underpinnings of psychotherapeutic intervention (Mischel, 2008).

Clinical psychology training

The development of clinical psychology training in the United Kingdom has evolved over time. In the 1960s, training was delivered at masters level (National College for Teaching and Leadership, 2016). It wasn't until the mid-1990s that the professional doctorate was introduced in line with the growth of the profession and its position within NHS hierarchies (Cheshire & Pilgrim, 2004). This also followed a Department of Health review into the profession (Management Advisory Service, 1989) which indicated that the work of the clinical psychologist entailed additional competencies above that of the other psychological professions in understanding psychological theory and the scientific approach from a broader framework. The evolution to doctorate level training also necessitated a large research component in the form of a doctoral thesis which served to develop clinical psychologists research skills to a high level, as well as offer novel contribution to the evidence base.

The present portfolio

This thesis portfolio seeks to update the picture of the clinical psychologist as a scientist-practitioner. Chapter Two presents a systematic review paper investigating attitudes towards evidence-based practice in psychotherapists, a key process model for marrying research evidence into the realities of clinical practice. Chapter Four presents an empirical paper with a primary aim to understand the research related activities UK clinical psychologists are undertaking. Finally, Chapter Five discusses the combined findings of these studies.

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Chapter Two

Systematic Review

What attitudes do psychotherapists hold towards evidence-based practice? A systematic review

Word count: 5998

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Prepared for submission to Psychology and Psychotherapy: Theory Research and Practice.

Author guidelines are outlined in Appendix A. Word count limit: 6000.

Abstract

Purpose: Attitudes to evidence-based practice in psychotherapist populations appear to be mixed and there is confusion in the literature as to how evidence-based practice is defined and measured. This systematic review aims to summarise the attitudes psychotherapists hold towards the tripartite model of evidence-based practice which promotes integration of research, clinical expertise, and patient preferences.

Methods: CINAHL Ultimate, MEDLINE Ultimate and APA PsycInfo databases were searched. Studies were included if they investigated attitudes towards the tripartite model of evidence-based practice and included psychotherapist populations.

Results: Nine studies met criteria for inclusion. Two used qualitative methods and seven used quantitative methods. Varied measurement tools were used. Overall, attitudes towards evidence-based practice were positive. Commonly endorsed attitudes included evidence-based practice being beneficial for clients, improving overall practice, and improving quality of service.

Conclusions: Attitudes towards the tripartite model of evidence-based practice appear to be positive in psychotherapy populations. This is hypothesised to be related to a clearer definition of evidence-based practice as a tripartite model, distinct from concepts such as empirically supported treatments.

Keywords

Evidence-based practice, Professional practice, Psychotherapist attitudes, Scientist-practitioner

Practitioner Points

- Overall psychotherapist attitudes to the tripartite process of evidence-based practice appear positive. Commonly endorsed attitudes included evidence-based practice being beneficial for clients, improving overall practice, and improving quality of service.
- Misunderstanding of what evidence-based practice constitutes may explain mixed and negative attitudes reported in the literature, particularly where empirically supported treatments and treatment manuals are concerned.
- Teaching evidence-based practice as a clear and distinct concept in training programmes and other ongoing professional training may be useful to correct these potentially harmful misconceptions.
- Further research is needed to understand how evidence-based practice attitudes translate into evidence-based practice behaviours.

Introduction

What is Evidence Based Practice: History, Context, and Definition

The modern concept of evidence-based practice (EBP) has its beginnings in evidence-based medicine. The concept, aiming to marry scientific methodology with clinical practice, gained prominence towards the end of the twentieth century from the work of those such as Sackett et al. (1996; 2000). Key concepts within this were the skill of critical appraisal in understanding and applying evidence, and the idea of EBP as a synthesis of clinical expertise, research evidence, and patient's values and experiences to guide clinical decision making.

As well as its importance in medicine, the concept has been espoused across psychiatry (Wallace, 2011) and allied healthcare professions such as nursing (Youngblut & Brooten, 2001), social work (Soydan & Palinkas, 2014), and occupational therapy (Bennett & Bennett, 2000). It has also been adopted in psychotherapeutic disciplines where it aligns with key professional practice concepts such as the scientist-practitioner model (Raimy, 1950), (a component of many psychotherapy training programmes) and offers a means to integrate research findings with clinical expertise, experience, and client preferences. With regards to EBP in mental health, a World Health Organisation (2001) report also asserted the need for research integration and EBP in mental health services.

Further to this, several professional bodies have set up taskforces and published reports defining and encouraging the use of EBP in the delivery of psychological interventions e.g. the American Psychological Association (APA Presidential Task Force on Evidence-Based Practice, 2006) and Canadian Psychological Association (CPA Task Force, 2012). The APA taskforce defined EBP as *"the integration of the best available research with clinical expertise in the context of patient characteristics, culture, and preferences".* This is the definition we will use in this review. Although straightforward by design, attempts to define the three composite components in detail are more complex.

The best available research evidence refers to scientific evidence but is not confined to large scale studies and randomised controlled trials. It is understood that the most appropriate research design can vary based on the phenomena studied (Greenberg & Newman, 1996). There are suggested hierarchies of research evidence, commonly with systematic reviews placed atop as the 'best' evidence, through to case studies and expert opinion at the lower end (National Health and Medical Research Council, 2009). Clinical practice needs can also vary significantly and so for some

circumstances there will be little to no clinical evidence applicable to the clinical problem and other evidence forms such as practice-based evidence, evidence derived from clinical practice and cultural paradigms, may be helpful (Holmqvist et al., 2015; Isaacs et al., 2005). Additionally, as well as treatment efficacy demonstrated by the evidence, treatment utility needs to be considered as to whether the evidence-based solution will generalise to the clinical setting and be feasible or acceptable to patients (APA, 2002).

Clinical expertise has been a somewhat controversial (Spring et al., 2005) and more elusive concept to define but is comprised of clinical judgement and experience (Lilienfeld et al., 2013). The practitioner as a scientist has long been a key concept in psychotherapy training and necessitates a wide range of skills to bridge the gap between research and practice. These skills include assessment and formulation skills (Cole et al., 2011), hypothesis testing and refinement (Kuyken et al., 2009; Persons, 2008), interpersonal therapeutic skills (Wampold & Brown, 2005), continuing professional development and knowledge acquisition (Neimeyer, 2012), and integrating individual patient needs (Norcross, 2002).

Lastly, patient values and experiences concern the need to tailor clinical decision making and planning to patients' idiosyncratic needs. This concerns sociocultural factors, developmental history, previous experiences, preferences, and motivation to name a few (Levant & Hasan, 2008). Not only is this essential for useful treatment but also forms a key part of the paradigm shift in modern healthcare to shared decision making and self-management (Spring, 2007).

The Importance of Evidence Based Practice

EBP is important in terms of practice quality, outcomes, and resource allocation (Pope, 2003). Its use is associated with improved quality and outcomes for healthcare services (Cochrane, 1972; Daleiden et al., 2006; Huppert et al., 2006) as research evidence can help to clarify what treatments are efficacious under scientific conditions thus minimising bias and mitigating the use of unscientific interventions (Lilienfeld et al., 2003) and then provide a guide as to how to translate this evidence into the contexts of clinical practice. This reciprocally informs policy and allocation of resource, an example of this being the work of the National Institute for Health and Care Excellence guidance in the United Kingdom which informs service planning through translational and methodological research to recommend efficacious treatments (Jonsson & Bouvy, 2018).

EBP use also lays the groundwork for continued professional learning and growth. Over years of clinical practice there will be many advancements and changes to the evidence base. It is essential that practitioners can evaluate and implement new findings into their practice independently (or whilst accessing appropriate support) once their more formal training period is completed. Furthermore, as EBP is so widely adopted across healthcare professions, it provides a framework for interdisciplinary learning, formulation, problem solving and decision making within healthcare practice (Spring, 2007).

Evidence Based Practice, Evidence Based Practices and Empirically Supported Treatments

Linked to the concept of EBP are the concepts of evidence-based practices and empirically supported treatments. It is essential to distinguish between these as there is significant conflation in the literature and within practitioner populations around these terms (Drisko & Friedman, 2019; Luebbe et al., 2007; Thyer & Pignotti, 2011; Wachtel, 2010).

Empirically supported treatments (ESTs) (sometimes called evidence-based treatments) are one form of conceptualising research evidence. Broadly speaking, they constitute a range of specific psychological interventions which have been found to be effective in controlled research (Chambless & Hollon, 1998) such as trauma focused cognitive behavioural therapy (Ehlers & Clark, 2000) or eye movement desensitization and reprocessing (Shapiro, 2014). Under this umbrella are manualised therapies which entail a more prescriptive approach to a treatment plan for specific problems or disorders. ESTs differ from EBP in that ESTs maintain a focus on research evidence and standardised forms of therapy delivery, whereas EBP explicitly incorporates clinical expertise and patient preferences alongside the research evidence component. This allows scope to move outside of evidence from controlled research upon reaching the limits of available evidence, for example when working with understudied populations, treatment resistant symptoms, and particular client needs which may not be reflected in the evidence base.

The term evidence-based practices is also used in some fields and refers to a range of interventions, policies and ways of working which have some form of empirical support (Dimeo et al., 2012).

Attitudes

Attitudes are general evaluations towards an object, ranging from negative to positive (Eagly & Chaiken, 1993; VandenBos, 2007). Attitudes have been shown to influence whether behaviours are carried out (Ajzen, 1991; Ajzen et al., 2018), with behavioural intention thought to play a mediating

role (Armitage & Conner, 2001) and other moderating factors such as the complexity of the behaviour also thought to be important (Johnson & Boynton, 2010). In psychology research, attitudes are often measured using Likert type scales (Eagly & Chaiken, 2005). Measures typically contain several items pertaining to the content, strength and importance of the attitude to the object, with responses anchored by numbers or labels. Although there has been debate about their validity, Likert scales provide a useful measure of information on subjects' attitudes (Willits et al., 2016) and allow for straightforward administration and response (Albaum, 1997).

EBP Reception

The EBP movement in psychotherapy has not been without controversy; there is extensive literature to suggest that psychotherapists are resistant to the concept of EBP (Addis et al., 1999; Baker et al., 2008) and may even see research and practice as oppositional (Henton, 2012). Recurring themes include ideas such as: research evidence not being applicable to clinical situations (Stewart & Chambless, 2007); EBP not paying sufficient attention to non-specific influences such as the therapeutic relationship (Lilienfeld et al., 2013); EBP removing the human elements of therapy; and EBP not allowing the flexibility to consider client needs and clinical intuition (Pagoto et al., 2007).

Other studies suggest a more positive landscape of psychotherapist attitudes towards EBP. Borntrager et al. (2009) found that therapists had generally positive attitudes towards EBP, Aarons et al. (2004) found positive attitudes towards EBP in therapy interns and Addis and Krasnow (2000) found positive attitudes in academic psychologists.

One possible explanation for the mixed findings regarding attitudes towards EBP is the level of conflation in literature around what constitutes evidence-based practice. Criticisms of EBP are most common when EBP is taken to be interchangeable with ESTs (e.g. Shedler, 2018). Evidence suggests that many practitioners fail to distinguish between the different but related concepts of EBP and ESTs (Messer, 2004; Schlosser & Sigafoos, 2008; Spring 2007). For example, Dimeo et al. (2012) attempted to investigate attitudes towards evidence-based practice but only one participant out of 109 was able to define it correctly. There is some evidence that when this conflation is addressed, attitudes appear to be more positive (Borntrager, 2009).

Further to this, one commonly used scale in studies examining attitudes to EBP is the evidence-based practice attitude scale (EBPAS) (Aarons, 2004). This scale actually measures attitudes to empirically supported and manualised treatments (depending on whether the EBPAS or modified practice

attitude scale (MPAS) (Chorpita et al., 2004) is used). Consequently, some studies aiming to investigate EBP attitudes but using the EBPAS are in fact investigating attitudes to ESTs (such as Hamill and Wiener (2018) and Nussbaumer-Streit et al. (2022)). Measures of EBP such as the Evidence-Based Practice Process Assessment Scale (Rubin & Parrish, 2010) are used less frequently in EBP research.

Rationale for the Current Review

Attitudes are theorised to be instrumental as to whether behaviours are ultimately carried out (Ajzen, 1991) and so if EBP adoption is to be promoted effectively then it is important to gain a clearer picture of what the prevailing attitudes are and how widespread negative attitudes might be amongst psychotherapists to this concept specifically. Therefore, the primary aim of this systematic review is to summarise attitudes psychotherapists hold towards EBP as a process distinct and unconflated with ESTs and evidence-based practices. To our knowledge, there has been no systematic review to date on this subject. Our research question is: what attitudes do psychotherapists hold towards EBP?

Methods

Search Strategy and Procedure

A systematic review protocol was developed in line with PRISMA (preferred reporting items for systematic reviews and meta-analyses) guidance (Moher et al., 2009) and registered on the international prospective register of systematic reviews (reg no. CRD42023421135). The full protocol can be found in Appendix B.

Searches were conducted using CINAHL Ultimate, MEDLINE Ultimate and APA PsycInfo databases. Specific search terms were (psychologist* or therapist* or psychotherapist* or psychiatrist* or “social worker*” or counselor* or counsellor* or clinician* or “occupational therapist*”), (attitude* or perception* or opinion* or thought* or feeling* or belief* or view* or idea*) and (“evidence-based practice*” or EBP or “evidence base*”). Relevant index terms were also used and varied by database. Searches were first conducted on 22.08.23 and repeated on 08.02.24 for papers published since the initial search.

Inclusion and Exclusion Criteria

Studies were screened in accordance with the inclusion and exclusion criteria outlined in Table 1.

Table 1

Inclusion and Exclusion Criteria

Inclusion	Exclusion
Primary research (published in an academic journal, excluding review articles)	Systematic reviews, summary documents or grey literature
Written in or translated to English language	Any paper not referencing evidence-based practice as a tripartite model. For example: evidence-based practices and empirically supported treatments
Evaluation of attitudes must concern evidence-based practice as defined by the tripartite model. Papers must refer to: research evidence, clinical judgement, and patient values and preferences.	Any professional not delivering psychotherapeutic practice (e.g. EBP in physiotherapy or dentistry)
Must include psychotherapists: defined as professionals or graduate students who can be reasonably understood to be trained in and delivering psychotherapeutic interventions i.e. support to help a person identify and change troubling emotions, thoughts, or behaviours	Any paper not commenting on psychotherapeutic practice specifically (e.g. EBP in psychiatry with regard to prescribing only, social workers delivering social interventions, occupational therapists offering practical support)
'Psychotherapists' must make up over 50% of the sample if not represented separately in results	Paraprofessionals e.g. psychological wellbeing practitioners or assistant psychologists
Must report on attitudes towards evidence-based practice. This must include a personal evaluation of evidence-based practice which may range from positive to negative.	Papers using only the EBPAS, MPAS or other measures relating to ESTs or manualised therapy.
There were no restrictions concerning: publication date, geographical area, or country of publication	

Screening

Screening of titles, abstracts and full texts were conducted by the first author. Twenty percent of the full text articles screened (n = 16) were reviewed by an independent second reviewer. One article for which consensus could not be reached was reviewed by JH. Full double screening was outside the scope of this review as a doctoral project.

Quality Appraisal

The methodological quality of included studies was assessed against the mixed methods appraisal tool (MMAT) (Hong et al., 2018). The MMAT is a quality appraisal checklist for studies using a range of methodologies and was chosen for this review due to the mixed methodologies of included studies.

Studies were reviewed by the first author with 20% (n = 2) reviewed by an independent reviewer. Agreement on rating was 100%. Although a procedure was in place should discrepancies occur, there were none requiring discussion with a third reviewer.

Scores on the MMAT checklist were converted into an overall percentage score. Although caution is advised when converting the checklist items into an overall percentage score (as this does not convey the relative strengths and weaknesses of the studies or provide insight into the decision making behind the ratings), we have provided a percentage score to give indication of quality ratings in Table 2. Higher percentage score is indicative of higher quality. A further breakdown of these scores is available in the appendices (Appendix C)

Extraction and Synthesis Methods

Extracted data consisted of population, sample size, setting, location, design, aims, demographic information (age, gender, ethnicity), EBP definition, attitudinal measure, score, and findings.
A narrative synthesis of this information was then conducted in line with Popay et al.'s (2006) guidance. This was chosen as it facilitated the inclusion of both qualitative and quantitative studies and gave broader scope for clarification and insight into the issues surrounding EBP research (Greenhalgh et al., 2018). The process entailed synthesis through identifying recurring patterns and findings across studies, exploring relationships in the data, and assessing robustness of the methodology and findings across the included studies.

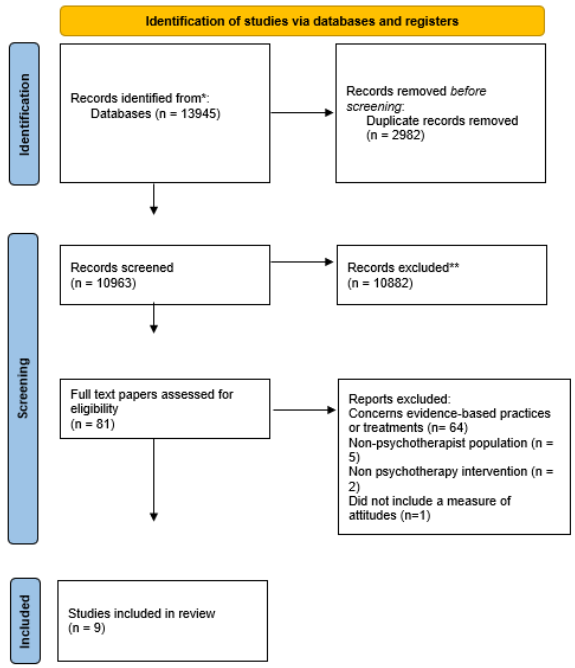
Results

Screening

Database searching generated 13,945 papers. After duplicates were removed, this left 10,963 papers to be screened at title level. Following this, the remaining 3,957 papers were screened at abstract level with 82 of these then screened at full text level. Nine of these met the full criteria for inclusion. Figure 1 illustrates the screening process in the form of a PRISMA diagram (Page et al., 2021).

Figure 1

PRISMA 2020 flow diagram



Study Characteristics

The characteristics of included studies are detailed in Table 2. The nine studies had a combined sample size of *N*= 2549 and included: two qualitative and seven quantitative papers; two samples from graduate students or trainees and seven from qualified psychotherapy professionals; eight from North America and one from the United Kingdom. Each study used a different measure of attitudes (two studies used the Evidence Based Practice Process Assessment Scale (EBPPAS) but each used a different version).

Six of the studies contained a sample consisting solely of psychotherapists. Three studies included other professionals. These were included because they either analysed psychotherapist data separately or psychotherapists comprised over 50% of the sample.

The professional orientation of the psychotherapists is detailed in Table 2. The majority of the sample were psychologists or clinical psychology graduate students (with the rest of the sample comprising of unspecified psychotherapists, social workers, marriage and family therapists, health psychologists, behavioural medicine professionals, psychiatry trainees, and youth community therapists). One consideration is the extent to which we can be sure that psychotherapists who were not

psychologists would have experienced the scientist-practitioner model as part of their training. The majority of these participants were either: psychotherapists whose primary modality is cognitive behavioural therapy (CBT), for which most training courses explicitly align to a scientist-practitioner model (Hool, 2010; Salkovskis, 2002); and psychiatrists for whom EBP is a core tenet (Wallace, 2011). However, it is possible that the small proportions of other psychotherapy practitioners included may not have had experience of an explicit EBP framework. This may have influenced their ability to reflect meaningfully on it when reporting attitudes.

Quality Appraisal

Studies varied in their methodological quality as appraised by the MMAT. MMAT score converted to a percentage ranged from 40-100 (with the mean score being 73.3%). Seven of the nine studies scored 60% or above with only two being rated of lower quality (Arumugam et al., 2018; Luebbe et al., 2007). Most limitations were due to representativeness of sampling and the potential for nonresponse bias.

Definitions of EBP

All papers defined evidence-based practice as encompassing the three components of the tripartite evidence-based practice process model (see Table 3 for study definitions of EBP). One study (Williams et al., 2021) does not reference it explicitly but identifies its constituent components clearly and so was included. Most (Luebbe et al., 2007; Middleton et al., 2020; Okamura et al., 2019; Rodriguez-Soto et al., 2015; Wilson et al., 2009) referenced the 2006 APA taskforce definition (APA, 2006). The remaining studies drew definitions from medical literature (e.g. Dawes et al., 2005; Institute of Medicine, 2001; Sackett et al., 2000; Strauss, 2005).

Measures

Measures of attitude towards evidence-based practice were varied (see Table 3 for a full summary). Two of the papers examined attitudes qualitatively (Pagoto et al., 2007; Wilson et al., 2009), exploring barriers and facilitators to EBP and attitudes to EBP respectively.

The remaining seven papers used quantitative measures of attitudes towards EBP. Of these, two used an unvalidated survey designed specifically for the study (Luebbe et al., 2007; Middleton et al., 2020). The five remaining papers used previously validated measures, namely: two used a version of the Evidence-Based Practice Process Assessment Scale (EBPPAS- short version (Parrish & Rubin, 2011) and Revised-EBPPAS (Rubin & Parrish, 2010); a modified version of the Evidence Based

Practice- Knowledge, Attitude, Behaviour Questionnaire (EBP-KABQ) (Shi et al, 2014); the Evidence-based Professional Practice Scale (EBPP-S) (Bernal & Rodríguez-Soto, 2010); and the Evidence Based Practice Inventory (EBPI) (Kaper et al., 2015).

Measures primarily utilised a Likert type response format. Attitudes tended to be measured in terms of questions regarding participants views and ideas surrounding the importance, utility, impact, and behaviours toward EBP.

Table 2

Study Characteristics

Study	Sample	Setting	Aims	Location	Design	Age (years)	Gender	Ethnicity	Quality rating
Luebbe et al., 2007	Clinical psychology graduate students (*n* = 1195)	University	Assess how clinical psychology graduate students view the EBP movement in psychology	USA & Canada	Cross sectional survey	*M* = 27.7, *SD* = 5.1	80.9% women	White (80.6%); Hispanic/Latino (5.9%); Asian/Asian American (5.1%); African American (3.9%); Biracial (2.1%); Other 2.4%	40%
Arumugam et al., 2018	Psychologists comprised 13.2% of the sample (*n* = 89) *Total sample (n= 675): psychologists, physicians (MDs), registered nurses, occupational therapists, physical therapists*	Pain management	Compare the knowledge, attitudes, and behaviours toward EBP of different professional groups	Canada	Cross sectional survey	Not given	Not given	Not given	40%
Middleton et al., 2020	Licensed psychologists and psychotherapists (*n* =684)	Mixed	Investigate attitudes to EBP and discern similarities and differences between licensed psychologists and psychotherapists in Canada and 'leaders in the field'	Canada	Cross sectional survey	Modal range: 31 - 40 years old (30.0%).	Female 71.6%	Not given	100%
Rodriguez-Soto et al., 2015	Clinical psychologists, counselling psychologists, social workers, and graduate students (*n* = 132) *66.41% of the sample were psychologists*	Mental health providers	Evaluate how EBP knowledge, attitudes, and individual differences predict EBP behaviours	Puerto Rico	Cross sectional survey	Range: 24 - 80 *M* = 43.87, *SD* = 11.52	95 female, 37 male	Puerto Rican (94.40%); Dominican (1.90%); Other Latino/a group (3.70%)	60%
Parrish & Rubin, 2012	Psychologists comprised 12.5% of the sample (*n* = 108), and licensed marriage and family therapists 8% (*n* = 69) *Total sample (n = 865): social workers (79%), psychologists and licensed marriage and family therapists*	State licensed therapists	Investigate how social workers compare with LMFTs and psychologists regarding their orientations toward the EBP process	Texas, USA	Content analysis, thematic analysis	Psychologists *M* = 53.57, *SD* = 11.4 LMFTs *M* = 54.4, *SD* = 12.68	Psychologists 56 female, 44 male LMFTs 44 female, male 21	Psychologists White 93, Hispanic 5, Alaskan native 1 LMFTs White 55, African American 2, Hispanic 6, Alaskan native 1	100%
Pagoto et al., 2007	Clinical psychologists, health psychologists, and behavioural medicine professionals (*n* = 37)	Mixed	Characterize the major facilitators and barriers to EBP perceived by behavioural professionals	USA	Cross sectional survey	Not given	57% women	Not given	80%

Williams et al., 2021	Psychiatry trainees (*n* = 168)	Unknown	Describe EBP related attitudes, social norms, perceived behavioural control, decision-making preferences, and behaviour	England (northwest)	Cross sectional survey	Not given	Not given	Not given	60%
Wilson et al., 2009	Clinical and counselling psychologists (*n* = 21)	Working with adult populations	Investigate attitudes toward EBP and how practitioners make clinical decisions regarding client treatment.	USA	Interview - grounded theory	<u>Counselling psychologists</u> Range: mid 30s-63 <u>Clinical psychologists</u> Range: 32 – 58	<u>Counselling psychologists</u> 5 women, 3 men <u>Clinical psychologists</u> 4 men, 4 women	<u>Counselling psychologists</u> 1 Jewish; 7 European American <u>Clinical psychologists</u> European American 8	100%
Okamura et al., 2019	Youth community therapists (*n* =46)	Child and Adolescent Mental Health Division home therapists	Determine the extent to which varying types of therapist knowledge (i.e., EBP process and general awareness knowledge) influence therapist utilization of specific practices derived from the evidence-base	Hawaii, USA	Cross sectional survey	Range 24- 67 *M* = 38.42, *SD* = 10.01	73.9% (n = 34) female	White (*n* = 16, 37.2%), Native Hawaiian or Pacific Islander (n = 14, 32.6%), Asian (*n* = 7, 16.3%), Hispanic or Latino (*n* = 3, 7%), Alaska Native or American Indian (*n* = 1, 2.3%), Other (*n* = 1, 2.3%), Unknown (*n* = 1, 2.3%). Not reported (*n* = 3, 7%)	80%

Table 3

Study Findings

Study	EBP definition	Attitude measure	Score and interpretation
Luebbe et al., 2007	"The integration of best research evidence, clinical expertise, and patient preferences" (APA Presidential Task Force on Evidence-Based Practice, 2006)	Created specifically for this study to assess: experience with and exposure to EBPP in class and practice settings; attitudes about EBPP; and perceptions regarding how EBPP may influence future clinical practice and research	71.2% of students reported agreeing with the principles of EBPP '*quite a bit*' or '*a lot*'. *M* = 3.90 (*SD* = 0.98) *Higher scores indicate more favourable responses. Responses were given on a 5-point scale with responses: 1. Not at all; 2. A little bit; 3. Somewhat; 4. Quite a bit; 5. A lot*
Arumugam et al., 2018	"The integration of best research evidence with clinical expertise and patient values" (Strauss, 2005)	The Evidence Based Practice- Knowledge, Attitude, behaviour Questionnaire (EBP-KABQ). (Shi et al., 2014) (*Modified for this study to be relevant to a wider range of clinicians and improve measurement properties)*	Psychologists had a mean score of 58.1 (*SD* = 6.47) on the attitude subscale indicating a positive attitude toward EBP. *Higher scores indicate more favourable responses. Responses were given on a 7-point ordinal scale. Possible scores range from 0-89. A score of over 50% indicates a positive attitude.*
Middleton et al., 2020	"A tripartite model that includes the best available research, clinical expertise, and client preferences, culture, and characteristics" (CPA, 2012; APA, 2006)	Survey designed for this study to explore all central EBP concepts.	Licensed psychologists and psychotherapists were found to be attitudinally favourable to EBP tenets. Regarding attitudes to EBP generally: "EBP is important in promoting public health" (*M* = 4.23, *SD* = 0.91), "EBP is important in promoting effective psychological practice" (*M* = 4.22, *SD* = 0.91). "EBP improves psychotherapy outcome" (*M* = 4.08, *SD* = 0.97) *Higher scores indicate more favourable responses. Responses were given on a 5-point scale* with *responses: 1. Strongly disagree; 2. disagree; 3. neither; 4. agree; 5. Strongly agree.*
Rodriguez-Soto et al., 2015	"Utilize and integrate the best available research according to their clients' or patients' needs, values, goals and context" (APA, 2006)	Evidence-based Professional Practice Scale (EBPP-S) (Bernal & Rodríguez-Soto, 2010).	Mental health providers reported highly positive attitudes towards EBP (*M* = 26.4, *SD* = 3.70). *Higher scores indicate more favourable responses. Possible scores range from 6-30. Responses were given on a 5-point scale with responses from 1: total disagreement to 5: total agreement.*
Parrish & Rubin, 2012	"Integration of best research evidence with clinical expertise and [client] values" (Sackett et al., 2000)	Evidence-Based Practice Process Assessment Scale (EBPPAS) short version (Parrish & Rubin, 2011)	Mean score for psychologist attitudes on the R-EBPPAS is 48.52 (*SD* = 9.51) with an average of 3.56 on each item. Mean score for licenced marriage and family therapists is 47.44 (*SD* = 7.96), with an average of 3.38 on each item.

			Higher scores indicate more favourable responses. Possible scores range from 14-70. An average score above 3 for each item indicates a positive score. Responses were given on a 5-point scale with responses: 1. Strongly disagree; 2. Disagree; 3. Neutral; 4. Agree; 5. Strongly agree.
Pagoto et al., 2007	"Integration of best research evidence with clinical expertise and patient values" (Institute of Medicine, 2001)	Open ended question regarding barriers and facilitators to EBP for content analysis	Attitudes towards EBP were the most frequently cited barrier to EBP (frequency 32%) and rarely (9%) cited as facilitators.
Williams et al., 2021	"Decisions about healthcare based on the best available, current, valid and relevant evidence… made by those receiving care, informed by the tacit and explicit knowledge of those providing care" (Dawes et al., 2005)	Evidence Based Practice Inventory (EBPI) (Kaper et al., 2015)	Responses to attitude questions suggest that general attitude to EBP was perceived as beneficial. Items had a median response of 5 and a lower quartile of 4 or higher. Attitude in relation to individual circumstance was positive but more mixed. Items had a median of 4 and lower quartile of 3) *Scores of 1-3 indicate negative attitudes, whereas scores of 4-6 indicate positive attitudes.*
Wilson et al., 2009	"The integration of the best available research with clinical expertise in the context of patient characteristics, culture, and preferences" (American Psychological Association [APA, 2006]	Semi structured telephone interview	Attitudes toward EBPP were primarily positive and open to the expanded definition of evidence
Okamura et al., 2019	"The process of integrating the best available research with clinical expertise in the context of patient characteristics, culture, and preferences" (APA, 2006)	Revised Evidence-Based Practice Process Assessment Scale (R-EBPPAS) (Rubin & Parrish, 2010).	Average score for attitudes on the R-EBPPAS is 51.65 (Mean) 7.21 (SD). The average per item score was 3.69. *Higher scores indicate more favourable responses. Possible scores range from 14-70. An average score above 3 for each item indicates a positive score. Responses were given on a 5-point scale with responses from: 1. Strongly disagree; 2. Disagree; 3. Neutral; 4. Agree; 5. Strongly agree.*

EBPP: evidence-based practice process (synonymous with EBP as defined in this paper)

Attitudes Toward Evidence-Based Practice

Overall attitudes towards EBP were demonstrated to be positive in eight out of the nine studies. The strength of positive attitude varied between papers with some reporting EBP attitudes nearer to a neutral stance (e.g. Okamura et al., 2019; Parrish & Rubin, 2012) and others reporting attitudes to be more strongly positive (e.g. Arumugam et al., 2018; Rodriguez-Soto et al., 2015). It should be noted that the papers reporting strongly positive attitudes were rated as being lower quality than those reporting attitudes closer to neutral. The study reporting explicit negative attitudes towards EBP (Pagoto, 2007) did so primarily in the context of attitudes being more commonly endorsed as a barrier to EBP utilisation (32%) than a facilitator (9%). It was also noted that many of the negative attitudes expressed were related to ESTs rather than EBP.

It is possible that the positive attitudes reported may be influenced by the representativeness of the samples. Three papers sampled populations which appear more likely to hold positive attitudes regarding EBP and subsequently reported some of the most positive attitudes to EBP in comparison to the other included studies. These three papers were also rated amongst the lowest quality on the MMAT. Luebbe et al. (2007) surveyed students from a group of clinical psychology programmes known for fidelity to the scientist-practitioner training model which may instill more positive attitudes to EBP than other psychology graduate programs or attract students who already hold these attitudes. Arumugam et al.'s (2018) sample came from data collected as part of a larger randomised controlled trial (RCT); it is feasible that participants choosing to take part in an RCT may have more favorable attitudes towards EBP. Rodriguez-Soto et al. (2015) sampled providers who attended a conference highlighting EBPs, which may have drawn attendees already interested in EBP. This could have skewed the results towards higher attitude scores than may exist in the general psychotherapy population.

However, other papers made efforts to recruit a less biased sample. Many recruited samples across a wide range of psychotherapy bodies and state licensing lists (Middleton et al., 2020; Pagoto et al., 2007; Parrish & Rubin, 2012; Wilson et al. 2009). Williams et al. (2021) and Okamura et al. (2019) approached the entire intended population (psychiatry core trainees and child and adolescent therapists respectively). Furthermore, two studies compared demographics from their sample to other data held nationally and found their samples to be similar (Middleton et al., 2020; Parrish & Rubin, 2012). Although still positive, results from studies with more representative samples do appear to indicate less favourable EBP attitudes. These studies were also of higher overall quality as appraised by the MMAT.

Other phenomena which may have skewed results are non-response and self-selection bias (Prince, 2012; Van Loon et al., 2003). Most studies did not investigate this but Parrish & Rubin (2012) surveyed non responders to understand their rationale. Of 131 people who responded 11 reported that they chose not to participate due to sceptical or negative views of EBP. This is a fairly small percentage (8.4%) but may still have had some impact in skewing their results.

Specifically Endorsed Attitudes

Four of the papers reported data indicating agreement with the general principles of EBP. Deconstructing this, several positive attitudes were frequently endorsed. Participants in seven of the papers endorsed the attitude that EBP improves outcomes and is beneficial for clients (Arumugam et al., 2018; Middleton et al., 2020; Okamura et al., 2019; Parrish & Rubin, 2012; Pagoto et al., 2007; Rodriguez-Soto et al., 2015; Williams et al., 2021), six of these also added that EBP improves overall practice and quality of service. Four of the papers found that participants believed that using EBP is the ethical thing to do (Arumugam et al., 2018; Okamura et al., 2019; Parrish & Rubin, 2012; Wilson et al., 2009) and two papers endorsed the attitude that EBP aids decision making (Rodriguez-Soto et al., 2015; Williams et al., 2021).

As mean scores on individual attitudinal items (where reported) and overall attitude scales in the quantitative papers were mainly positive, it was not possible to identify minority negative attitudes which may have been present unless explicitly stated. It was possible to extract data regarding negative attitudes from two studies of high and medium quality respectively (Pagoto et al. 2007; Williams et al. 2021) These included EBP not respecting professional autonomy, clinician judgement and client preferences and EBP dampening the disciplines humanity via devaluing empathy, respect, warmth, and creativity.

Conflation Between EBP and Other Related Concepts

Three of the nine studies (Luebbe et al., 2007; Pagoto et al., 2007; Wilson et al., 2021) report conflation and confusion between the concepts of EBP and ESTs, with this occurring even in high quality studies. Luebbe et al. (2007) found that only 3.7% of participants named all three components of the EBP concept when asked to provide a definition. Notably, 97.4% included reference to research, with 18% making reference to ESTs only.

Pagoto et al. (2007) reported that negative attitudes generally reflected the misconception that EBP involves use of ESTs to the exclusion of clinical judgement and patient values. Further to this, Wilson et al. (2009) noted that many of their interview participants initially believed EBP to be the same as

ESTs. Once they were told the correct definition and it was made explicit that client context and clinical expertise were also relevant considerations, it appeared that their reactions became more positive.

It is possible that the widespread nature of confusion over the definition of EBP may have influenced the results of the included studies, despite their rationale being oriented to the tripartite EBP definition. Most of the measures used required participants to have knowledge of what EBP is when responding to items i.e. item wording included the term EBP (e.g. EBP is important for clinical care). Several studies gave participants the correct definition of EBP to guide their answers (Arumugam et al, 2018; Luebbe et al., 2007; Williams et al., 2021) but others make no mention of doing so (Okamura et al., 2019; Pagoto et al., 2007; Parrish & Rubin, 2012; Rodriguez-Soto et al., 2015; Wilson et al., 2021). It is therefore possible that studies which did not give a correct definition and use a measure which requires knowledge of EBP to answer items are not in fact looking at the concept of EBP but whatever their participants believe EBP to mean. Furthermore, the studies which did give a definition do not guarantee that it was fully understood by participants or that prior misconceptions did not influence their responses regardless. However, the measure used by Middleton et al. (2020) is comprised of questions specifically about different aspects of the three parts of EBP, thus remaining valid even if their participants were to have no concept of the tripartite model.

Relationship Between Attitudes and Behaviour

There were mixed and limited findings as to whether EBP attitudes seem to predict behaviour. Rodriguez-Soto et al. (2015) and Williams et al. (2021) found no association between attitudes and behaviour, although both studies scored in the lower middle range for quality appraisal and Rodriguez-Soto et al. (2015) note that the infancy of EBP in Puerto Rico may have impacted their findings. However, Okamura et al. (2019), a higher quality study, found that EBP attitudes were a significant predictor of three out of twelve of their 'practices derived from the evidence base'. However, this study has a large number of analyses without correction for multiple comparison and so this appears to be a relatively small finding. Pagoto et al. (2007) also report that EBP attitudes are a response theme reported as a barrier to EBP, but are less frequently cited as a facilitator. Other papers did collect data on EBP behaviour (Arumugam et al. 2018; Parrish & Rubin, 2012) but did not analyse the relationship between this and attitudes.

Differences Between Psychotherapists and Other Professional Groups

Three of nine papers included some form of comparison between psychotherapists and other professional groups and found no significant differences in overall attitude towards EBP between them.

Arumugam et al. (2018) found that amongst psychologists, MD physicians, registered nurses, occupational therapists, and physical therapists, no professional group differed significantly on mean attitude to EBP score on the EBP-KABQ. Parrish & Rubin (2012) found that, within a sample of social workers, psychologists, and marriage and family therapists', attitudes to the EBP on the EBPPAS do not differ between professional groups when controlling for demographic variables. Middleton et al. (2020) found that licensed psychologists/psychotherapists were attitudinally similar in their overall attitudes to EBP (as measured by their specifically designed survey) to leaders in psychology.

Discussion

Main Findings

In this systematic review 13,945 journal articles were screened, of which nine articles were selected for inclusion due to their use of an attitudinal measure regarding EBP in psychotherapists. Overall, it was found that psychotherapist attitudes were largely positive when considering the overall conceptual process of evidence-based practice. Where negative attitudes were found, it appears that these represent negative attitudes towards the use of ESTs, rather than a negative attitude towards the concept of EBP. One particularly clear example of this confusion occurs in Pagoto (2007) where one reported negative attitude was that 'EBP does not take into account client preferences and clinical expertise' when this is in fact explicitly part of the EBP process. Also giving weight to this idea is Wilson et al.'s (2009) observation that attitudes appeared to improve when misunderstanding of the term EBP to mean EST was corrected by the interviewer.

Implications for Practice

Findings from this review regarding the generally positive attitudes of psychotherapists to EBP have utility in the essential task of bridging the gap between research and practice. Although Pagoto et al. (2007) found that negative attitudes are a barrier to EBP, it appears that the majority of negative opinions from practitioners do not pertain to the concept of EBP, but to ESTs and research evidence used blindly. When practitioners mistake one for the other, they neglect to make use of a useful

model to help bring research findings into practice, alongside consideration of client preference and their own clinical expertise. Teaching EBP as a clear and distinct concept in training programmes and other ongoing professional training would be useful to correct these potentially harmful misconceptions.

Additionally, behavioural change theories suggest that for behaviour to change, first attitudes must change (Ajzen, 1991). Whilst attitudes towards EBP are generally positive, it does not appear to be so clearcut for clinician attitudes to research and ESTs (Addis and Krakow, 2000; Johnson et al., 2016; Seligman et al., 2016). One avenue by which research findings and use of ESTs may be more widely adopted and integrated into clinical work may be to integrate them more explicitly into the overall model of EBP for clinicians, thus presenting ESTs in a way which resonates with therapists understanding of the evidence (Speers et al., 2022). Such methods could include referencing EBP more clearly in research papers and manuals and being clear about the role of the EBP process in utilising the research evidence, thus appropriately situating research as but one of three important guides to clinical treatment planning and decision making. If the other two components are explicitly referenced more frequently, then the research component may be less ostracised by some psychotherapists.

However, it is not clear to what extent positive attitudes to EBP predict behaviour from the limited findings of our study; of the three studies that did report on this, two did not find an association although it should be noted that these findings were rather limited. There are several studies which have found a significant positive relationship between attitudes and use of ESTs (Becker et al., 2013; Beidas et al., 2012; Leathers & Strand, 2013). It would therefore be helpful for future studies to examine this with regards to EBP specifically, possibly in isolation or incorporating other variables which are commonly found to be predictors of behaviour such as self-efficacy and normative expectations (De Vries et al., 1988). Future research directions and theoretical conceptualisation may also benefit from integration of implementation theories into this work with models such as the knowledge to action framework (Estabrooks et al., 2006) and quality implementation framework (Meyers et al., 2012) being useful to think about how research is disseminated through complex systems.

Limitations and Directions for Future Research

It is difficult to understand the negative attitudes that may be held amongst participants due to the high number of quantitative studies using a survey methodology. Results typically took the form of a

mean attitude scale score or in some cases mean scores for individual items. As mean responses were overwhelmingly positive, it was not possible to understand the spread of responses from the descriptive statistics reported e.g. there could be a bimodal distribution on some attitude questions. Therefore, results should be interpreted with some caution as large minorities of negative responses may be obscured. For example, Williams et al. (2021) reported that a substantial minority of participants reported views that 'EBP did not respect professional autonomy, clinical experience, or patient differences' despite the overall results indicating that a significant majority reported the opposite. Future research may benefit from closer analysis of response distributions and individual questions, as well as use of qualitative research methods to combat this issue.

As anticipated, the high level of conflation regarding the term evidence-based practice has also impacted the number of papers possible to review, reducing the scope of results. Many papers aiming to investigate attitudes to EBP could not be included as they used the term interchangeably with ESTs and evidence-based practices. For example, conceptually within the rationale for the study (e.g. Nussbaumer-Streit et al. (2022)), or by using a measure such as the EBPAS which actually measures attitudes to evidence-based practices (e.g. Hamill & Wiener, 2018). Furthermore, some papers did not define the term for their participants thereby jeopardising the integrity of their findings and their applicability to evidence-based practice as an overarching process (Berke et al., 2011; Dimeo et al., 2012).

The predominant use of Likert type scales introduces a risk of skewed data as they are sensitive to central tendency, and social desirability bias (Pimentel, 2010). Furthermore, the Likert scales used in many of the studies allowed for a broader range of positive responses than negative i.e. only allowing 'not at all' or some level of positive endorsement as a response. It is possible that this will have positively skewed responses. Future studies using Likert type scales may generate more representative responses if these scales include equal proportions of positive and negative indicators or survey positive and negative attitudes separately (as done by the EBPPAS (Parrish & Rubin, 2011)). Surveying positive and negative attitudes using separate questions may be particularly useful as there is evidence to suggest that positive and negative attitudes may have different relationships to EBP behaviour (Nelson & Steele, 2007; Pagoto et al., 2007).

Also highlighted by this review is the heterogeneity in measurement tools used to measure attitudes towards EBP. Two of the studies used a measure specifically designed for the study and no two papers used precisely the same measure. This is likely reflective of the wide scope of the term

attitude, confusion regarding the definition of EBP, and the lack of research in this specific area. If we compare this to the plethora of studies using the EBPAS to measure attitudes towards ESTs then it is much simpler to synthesise data across studies. Development of a clear measure of attitudes towards EBP is particularly important given the number of papers attempting to investigate EBP but in fact using the EBPAS. It is possible that if a measure if not widely adopted, then the EBPAS which is widely used will dominate in this research area despite it not being a valid measure of EBP. Considering the difficulties psychotherapists have in defining EBP and consequently reporting their attitudes in a way which is valid, the measure developed by Middleton et al. (2020) which asks explicit questions about the components and processes of EBP may be an effective measure to use. However, as it is a new measure, developed by the researchers by iterative review of the literature and consensus amongst three researchers, it would be beneficial for it to be validated in psychotherapist samples first.

The nature of narrative synthesis carries risk of bias at many stages of the process including when setting inclusion/exclusion criteria, in study selection, and in assimilating results (McDonagh et al., 2008; McKenzie & Brennan, 2019). The use of a systematic protocol, setting of inclusion criteria a priori, and dual review for a portion of the papers was intended to mitigate this somewhat and is a strength of this study. Risk of bias could have been improved by a full dual review process and review of the grey literature. However, this was outside of the scope of the study as a doctoral thesis project.

Another limitation of the data is that information pertaining to the demographic representativeness of the samples is limited. Luebbe et al. (2007), Arumugam et al. (2018), Pagoto et al. (2007), Rodriguez-Soto et al. (2015) and Okamura et al. (2019) did not comment on this. Middleton et al. (2020) comments only on which Canadian province participants are from and notes this to be representative of overall psychotherapist numbers. Parrish & Rubin, (2012) report representativeness of age (M = 54), and gender, however they also found an overrepresentation of white participants. Williams et al. (2021) note that their sample from northwest England may be unrepresentative of other UK and international regions. Wilson et al. (2009) noted a lack of ethnic diversity in their sample, with many European American participants. Additionally, all studies included in this review are from the USA and territories, Canada, or the UK. This limits the generalisability of the results to other countries and more ethnically diverse samples. This is particularly relevant considering that there is evidence of non-white populations being less favourable towards ESTs (Patterson Silver Wolf et al., 2018).

Conclusion

This review found that overall, psychotherapists held positive attitudes towards EBP when using the tripartite definition. It may be beneficial for research studies and EST manuals to be explicit about the EBP process and where research and ESTs are situated within this to support acceptability and utility of research to psychotherapy professionals. However, there are several sources of bias described in sampling and measurement tools which may have positively skewed findings. Future directions may include validation of measures and qualitative explorations to better understand any significant minority negative attitudes. The extent to which attitudes may lead to EBP behaviours is also still to be determined.

Statement of Contribution

Stevie Burnett: conceptualisation, methodology, data analysis, writing-original draft, project administration. **Dr Joanne Hodgekins:** conceptualisation, methodology, writing- review, supervision. **Dr Sarah Reeve:** conceptualisation, methodology, writing- review, supervision.

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Chapter 3

Bridging Chapter

Word Count: 200

Chapter Two's systematic review provides evidence that psychotherapist (including clinical psychologist) attitudes towards evidence-based practice are largely positive. Although findings were scarce and mixed regarding the strength of association between EBP attitudes and behaviour it is likely attitudes play some role in EBP behaviours.

EBP necessitates the integration of best available research with clinical judgement, and patient characteristics, culture, and preferences (APA Presidential Task Force on Evidence-Based Practice, 2006). This is exemplified in the role of clinical psychologists as scientist-practitioners (Shapiro, 2002). The role of the clinical psychologist necessitates critical consumption of research, contribution to the evidence base, and the integration of research into clinical practice (BPS, 2019). This is achieved through a plethora of research related activities.

There is evidence to suggest that clinical psychologists are not as engaged with research activity as we might expect them to be given their extensive research training (Eke et al., 2012). Chapter Four's empirical paper therefore aims to understand the range of research related activities clinical psychologists undertake. It also aims to understand the factors related to level of research activity, including the role that attitudes might play. Lastly it will seek to understand potential barriers and facilitators to future research activity.

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Chapter 4

Empirical Paper

Exploring post-qualification research related activity in UK clinical psychologists

Word count: 5264

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Prepared for submission to Psychology and Psychotherapy: Theory Research and Practice.

Author guidelines are outlined in Appendix A. Word count limit: 5000.

Abstract

Objectives: Previous research has consistently found that the modal number of research publications from clinical psychologists is zero. However, the role of the clinical psychologist as a scientist-practitioner means that the utilisation of their research skills and engagement with research related activity is broader than just publications. This study aims to understand the range of research related activities that clinical psychologists are engaged in. Secondary aims are to understand factors related to level of research related activity and barriers and facilitators to future engagement.
Design: The study utilised a cross-sectional design collecting data via an online survey.
Methods: A sample of 159 qualified UK clinical psychologists completed an online survey comprised of self-report questionnaires relating to demographics, research related activities, factors related to research activity involvement, and future barriers and facilitators. Data was analysed using descriptive statistics, univariate analyses, a regression model, and content analysis.
Results: A range of research related activities were reported, with 100% of respondents endorsing at least one research related activity in the past year. Factors associated with higher research activity included attitudes, gender, self-efficacy, resources, and support. Time and resources were reported to be frequent barriers and facilitators.
Conclusions: Clinical psychologists appear to engage in a broad range of research related activities beyond research publication. Several identifiable factors are associated with level of research related activity, although more research is needed to understand the relationships between these variables. There are also several barriers and facilitators such as time and resources to be considered in better supporting clinical psychologists to make use of their research skills.

Keywords

Scientist-practitioner, clinical psychologist, research related activity, evidence-based practice

Practitioner points

- Clinical psychologists appear to utilise their research training through a range of research related activities beyond formal research publication. Such activities include the use of research to inform clinical practice, and conducting service evaluations, improvement projects and clinical audits.
- Attitudes, gender, self-efficacy, resources, and support appear to be associated with level of research activity.

- Many barriers are reported to research related activity, the most frequently reported of which are time and resources.

Introduction

Research in Clinical Psychology

The role of the clinical psychologist is one of a scientist-practitioner (Jones & Mehr, 2007; Shapiro, 2002). Research skills and experience are a core component of clinical psychology training and one of the nine core competencies set out in the British Psychological Society (BPS) accreditation standards (BPS, 2019). Further to this, critical consumption of and contribution to the evidence base is an explicit component of the role of a clinical psychologist (BPS, 2019).

It would follow that research engagement, activity, and output from UK clinical psychologists post-qualification would be reasonably high. However, studies have consistently found that the modal number of research publications by clinical psychologists is zero. This has been found in surveys of qualified UK clinical psychologists (Eke et al., 2012; Milne et al. 1990) and clinical psychology research staff (Newman & McKenzie, 2011). It has also been noted in US qualified clinical psychologists (Barrom et al., 1988; Brems et al., 1996; Kelley et al., 1978; Norcross et al., 2005). This is problematic on several counts.

Firstly, there are implications for clinical practice whereby if practitioners are divorced from current best practice evidence, then the efficacy of clinical treatments may be compromised. Secondly, a researcher/practitioner dichotomy may develop thus stagnating the integration of research into practice as research falls to only a select few (Cooper & Turpin, 2007). Thirdly, there are fiscal consequences as significant financial resource goes into the training of clinical psychologists every year; on average it is estimated to cost £159,420 per trainee (NCTL, 2016). If research skills are not used by clinical psychologists' post-qualification, then this is a poorly utilised resource. Lastly, the researcher-practitioner role is an integral part of the identity of clinical psychologists differentiating them from other professions (such as psychotherapists) and affording them the title of doctor. If clinical psychology as a profession is moving away from this aspect of the role, then this should be better understood to appropriately situate their role within mental health systems and academia.

Factors Related to Research Activity

To address this issue, it is also important to understand factors associated with level of research activity. One factor is research training environment (RTE) which refers to elements of graduate training programmes reflective of attitudes to research and science (Gelso, 1993). In clinical psychology RTE has been found to be positively associated with intent to carry out research (Eke et al. 2012), and also with research self-efficacy and outcome expectations (Szymanski et al., 2007). RTE has also been linked to research productivity in counselling psychologists (Gelso et al., 1996; 2000; Kahn, 2001; Phillips & Russell, 1994).

Outcome expectations refer to beliefs regarding the probable outcomes of an action (Bandura; 1986); research outcome expectations (ROEs) are another factor which has been shown to positively influence level of research activity in clinical psychologists (Eke et al., 2012) and relate to research interest in counselling psychologists (Bishop & Bieske, 1998), as well as mediating the relationship between RTE and research output (Kahn, 2001; Szymanski et al., 2007).

Self-efficacy refers to an individual's belief in their ability to perform certain tasks (Bandura, 1977; 1986; 1997). Szymanski et al. (2007) found research self-efficacy be related to research productivity in clinical psychologists, whilst Wright and Holttum (2012) also reported an association between research intention and self-efficacy in trainee clinical psychologists. Furthermore, studies from counselling psychology have found research self-efficacy to predict research activity (Kahn & Gelso, 1997; Phillips & Russell, 1994).

Links between attitudes to research and research output have also been found (Eke et al., 2012). Attitudes to research have been inconsistently defined in previous literature and have included definitions which encompass outcome expectations (Eke et al., 2012) and those which look at interest in and value placed upon research (Gelso et al., 1996; Royalty et. al 1986). This study defines attitudes in line with the latter definition to distinguish this from concepts such as outcome expectations which differ thematically.

Resources such as appropriate funding and paid time have also been highlighted as important factors related to research activity (Barrom et al.,1988; McHugh et al., 2016). Similarly, Eke et al. (2012) suggested that low perception of control over resources may prohibit formation of research intention.

There is some evidence to support an association between interactions with colleagues and integration of research activity into work in samples from various psychological professions (Corrie & Callanan, 2001; Royalty & Magoon, 1985). Eke et al. (2012) term this idea normative beliefs and have found this to be a strong predictor of research intention in clinical psychologists. Newman and McKenzie (2011) also highlighted support from others as an important factor to address in tackling barriers to research activity.

Other factors which may influence research activity include gender, for which Holttum and Goble (2006) have suggested a tentative link. Wright and Holttum (2012) found that research intention was linked to self-rated masculinity scores rather than biological sex or gender identity. We also hypothesise that prior research involvement may influence research activity.

There has been less research into the barriers and facilitators to research activity in clinical psychologists, although there are some obvious overlaps with the factors discussed above such as support from others and resources. Newman and Mackenzie (2011) and Haynes et al. (1987) both found that time was the most frequent barrier to research. Smith and Thew (2017) discuss this issue and make some recommendations for successful research such as role specification, managerial support, and collaboration.

Limitations of the Current Evidence

Research is narrowly defined in existing studies (Barrom et al., 1988) with the majority measuring this by number of publications (Eke et al., 2012; Mallinckrodt & Gelso, 2002; Newman & McKenzie, 2011). This neglects to incorporate the breadth of research related activities clinical psychologists may be involved in and recognise the various forms of research recognised as clinically relevant (American Psychological Association, 2006; Canadian Psychological Association, 2012; National Health and Medical Research Council, 2009).

Furthermore, this dichotomises clinicians into those who publish peer reviewed journal articles and those who do not, neglecting the position of clinical psychologists as occupying a middle ground between researcher and practitioner in the scientist-practitioner role long championed as a defining feature of the clinical psychologist (Shapiro, 1967; 1985). In fact, it is acknowledged in the BPS standards (BPS, 2019) that clinical psychologists are involved in a plethora of varied research related activities such as service evaluations, audits, critical research consumption, and its use to influence practice. These activities all require a high standard of research training and acumen but are seldom

represented in studies examining research in clinical psychology. Other than Barrom et al. (1988) which used a wider range of research related activities in a USA based sample of clinical psychologists, we have been unable to find studies using a wider definition reflective of the realities of clinical psychology practice.

Other limitations to the existing literature include many studies in this area being significantly dated, from non-UK populations, or from counselling psychology. Therefore, gathering a better understanding of the present landscape in UK clinical psychologists is much needed and furthers the rationale for this study.

Aims and Research Questions

The primary aim of this research is to understand the range of research related activities in which qualified clinical psychologists in the UK are involved. Secondly, factors associated with level of research activity are explored, alongside barriers and facilitators to future activity.

The primary research question is:

- What types of research activity are qualified clinical psychologists engaging in?

Secondary questions are:

- What factors are associated with level of research related activity?
- What are the barriers and facilitators to involvement in research related activity?

Methods

Design

The study utilised a cross-sectional design collecting data via an online survey.

Participants

Qualified clinical psychologists practicing in any UK setting, trained under a Doctorate of Clinical Psychology (DClinPsy) programme were eligible to take part. No participants satisfying these criteria were excluded for any other reason. Recruitment utilised alumni mailing lists for UK DClinPsy courses, social media, and sharing via professional networks (see Appendix F for recruitment adverts). A sample of 159 participants were included in the analysis.

Measures

The survey collected information relating to demographics, research related activities, factors related to research activity involvement, and future barriers and facilitators.

Demographics

Demographic information regarding age, disability, gender, socioeconomic status, sexuality, ethnicity, years qualified, primary employer and field of current role was collected. Socio-economic status was measured using first-generation university attendance as a proxy (Rubin, 2012).

Research related activity

A comprehensive list of eighteen research related activities was generated, informed by those described in the BPS standards (BPS, 2019), the list provided by Barrom et. al (1988), suggestions from Smith and Thew (2017), and the researchers own experiences. The number of research activities endorsed in the past year also served as the measure of the dependent variable (research related activity) in secondary analyses.

Predictive factors

Prior research involvement: We asked participants whether they published their ClinPsyD thesis and whether they had a PhD.

Research training environment: RTE was measured using the Research Training Environment Scale-Revised- Short Form (Kahn & Miller, 2000), an 18-item self-report measure rated on a 5-point scale to generate a summed total. Total scores range from 18-90 with higher scores indicating a more positive perception of RTE. It has been shown to have strong internal consistency reliability and construct validity (Kahn & Miller, 2000).

Research outcome expectations: ROEs were measured using the Research Outcome Expectations Questionnaire- Revised (ROEQ) (Bieschke, 2000), an 8-item self-report measure rated on a 5-point scale. The sum score is reported and the range of these scores is 8-40, with higher scores indicating more positive outcome expectations. This measure has been reported to have a coefficient alpha of .90 and account for only 6% less of the variance than the 18 item Research Expectations Questionnaire (Bieschke & Bishop, 1994).

Research self-efficacy: This was measured using the 12-item Self Efficacy in Research Measure (SERM) (Kahn & Scott, 1997), a revised form of the 33-item SERM (Phillips & Russel, 1994). Each item is rated on a 9-point scale to give a summed total ranging from 12-108 with higher scores indicating

greater self-efficacy. It has been reported to have good internal consistency (α=.90) (Kahn & Scott, 1997) and is a frequently used measure of self-efficacy (Gelso & Lent, 2000).

Attitude to personal value of research: Attitude to research was measured using a scale taken from Barrom et. al (1988). The first item was removed due to its lack of feasibility in routine clinical practice resulting in a 3-item measure. Items were rated on a 5-point scale with a total range of 3-15 with higher scores indicating more positive attitudes towards research.

Resources: No empirically validated measure of resource was found in review of the literature. Resources were measured using a single question "I have adequate resources available to conduct research" rated on a 4-point scale adapted from the resource-based questions asked in Barrom et al. (1988).

Support: Support from others was measured across superiors, peers and access to mentors and networks on a 5-point scale to give a sum score ranging from 3-15 with higher scores indicating higher levels of support.

Barriers and facilitators

Participants were asked to summarise the current barriers and facilitators to further research activity participation in narrative text. As there is less research in this area this enabled us to capture richer data.

Procedure

Participants were presented with the participant information sheet and consent information before being able to complete the survey. Data collection was via JISC online surveys, an online survey tool used widely in academic research which is GDPR (general data protection regulation) compliant. Participants completed all parts of the survey which took approximately 10 minutes.

Ethical considerations

Ethical issues including consent, confidentiality, and risk were considered according to guidance from British Psychological Society Code of Ethics (2014) and the Health Research Authority (HRA, 2017). A consent form (Appendix D) and participant information sheet (Appendix E) were presented to all participants thus allowing them to make informed choices about participating in the study. Data collection, storage and usage was in line with UK GDPR guidance and The Data Protection Act 2018. The study received ethical approval from UEA Faculty of Medicine and Health Science (Appendix I).

Data analysis

Quantitative data were analysed in IBM SPSS Statistics version 28 (IBM Corp, 2021). There were no missing datapoints due to survey design requiring responses to all questions. All analysis was performed at a significance level of $p < .05$. Preliminary data analysis was conducted to identify data entry errors, outliers, and violations of test assumptions.

The primary research question was answered using descriptive statistics for each research related activity. The second research question was investigated via an exploratory series of univariate analyses to compare group differences for categorical variables and correlate continuous and ordinal variables. Due to violation of the normality assumption for the dependent variable and small sample sizes for some demographic groups, Mann-Whitney U tests, Kruskal-Wallis tests and Spearman rank correlations were conducted for these analyses to mitigate the risk of type 1 error (Zimmerman, 2004). Variables with a high number of small groups were collapsed into larger groups prior to analysis. For Mann Whitney and Kruskal-Wallis tests, distributions of research activity scores were similar for all groups, as assessed by visual inspection of boxplot. For correlations, all relationships were monotonic, as assessed by visual inspection of a scatterplot. A Benjamini-Hochberg correction was applied to account for multiple comparisons. Relevant factors selected based on prior theory and practical relevance were then entered into a regression model to understand their predictive value on the dependent variable. Although non-parametric tests were used for univariate analysis, normality of the residuals in the regression model meant that a regression model was a justifiable statistical test for these circumstances. An a priori sample size estimation was made using G*Power 3.1 software (Faul et al., 2007) which indicated that for analyses to have 80% power at $\alpha = .05$ in detecting a small effect size of .15, a sample of 109 would be required (see Appendix H).

Qualitative inductive content analysis (Elo & Kyngäs, 2008) was used on the free text responses to collate and categorise barriers and facilitators. Open coding was used before grouping into higher order categories. Frequency of concepts was also recorded.

Results

Demographics

Table 1 summarises demographic information for the sample. Demographic proportions across the sample were broadly similar to HCPC diversity data for registered UK clinical psychologists (Health &

Care Professions Council, 2023). Despite this being representative of the profession, it should be noted that the sample is nonetheless majority White British (83%), female (85.5%), non-disabled (86.2%) and heterosexual (79.9%).

Table 1

Demographic information

Demographic Variable	Category	*n*	%
Age	20-29	10	6.2
	30-39	86	54.1
	40-49	49	30.8
	50-59	13	8.2
	60-69	1	0.6
Disability	Yes	22	13.8
	No	137	86.2
First Generation University	Yes	82	51.6
	No	77	48.4
Gender	Male	23	14.5
	Female	136	85.5
Sexuality	Bisexual	14	8.8
	Gay/Lesbian	6	3.8
	Heterosexual	127	79.9
	Pansexual	3	1.9
	Prefer not to say	9	5.7
Ethnicity	Any other Asian background	3	1.9
	Any other Mixed or multiple ethnic background	2	1.3
	Any other White background	14	8.8
	English, Welsh, Scottish, Northern Irish or British	132	83.0
	Indian	2	1.3
	Irish	4	2.5
	White and Black African	1	0.6
	White and Black Caribbean	1	0.6
Years qualified	Less than 5	56	35.2
	5-10	43	27.0
	10-15	23	14.5
	15-20	20	12.6
	20-30	16	10.1
	30+	1	0.6
Primary Employer	NHS	120	75.5
	University	12	7.5
	Self-employed	10	6.3
	Private company	1	0.6
	Charity and third sector	2	1.3
	Ministry of defence	2	1.3
	Local authority	1	0.6
	More than one	11	6.9
Area of Employment	Adult mental health	39	24.5
	Child and adolescent mental health	29	18.2
	Learning Disability	15	9.4
	Older adults	8	5.0
	Health Psychology	23	14.5

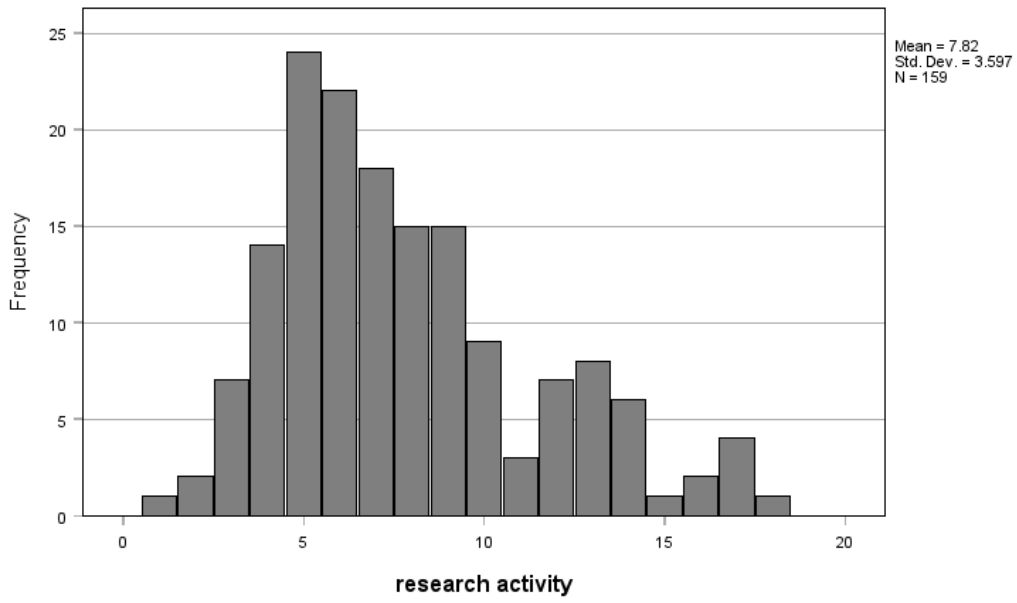
	Forensic	8	5.0
	Neuropsychology	6	3.8
	Other	7	4.4
	More than one chosen	24	15.1
Employment location	England	140	88.1
	Wales	4	2.5
	Scotland	11	6.9
	Northern Ireland	2	1.3
	More than one	1	0.6
	Declined to say	1	0.6
Have a PhD	Yes	27	17.0
	No	132	83.0
Published DClinPsy thesis	Yes	72	45.3
	No	86	54.1

What types of research activity are qualified clinical psychologists engaging in?

Table 2 summarises the eighteen different research related activities endorsed by participants. All participants endorsed at least one research related activity. Consistent with previous research, the modal number of participants reporting having submitted or published research in the past year was 0, with 64.15% not having done so in the past year. However, the modal number of research related activities endorsed within the last year was 5, with a mean of 7.82 (*SD* = 3.6) and range of 1-18.

Figure 1

Histogram showing number of research related activities endorsed.



The most reported activities concern research consumption and application of research to practice with 98.7% of the sample reporting having read a research paper in the past year, 93.1% having used research to inform their own practice and 84.9% to inform the practice of others. Many of the less frequently endorsed activities concerned more formal research production activities such as collecting and analysing data for research, writing up studies, and writing grant proposals. The three least endorsed activities were analysing data as part of a study (18.2%), writing a research grant proposal (15.7%) and writing or editing book chapters (14.5%).

Table 2

Research related activities by number endorsed

Research Related Activity	*N* (%)
Read a research paper e.g. research articles, literature reviews	157 (98.7)
Used research to influence and inform your own clinical practice	148 (93.1)
Used research to influence and inform the practice of others. e.g. through training and supervision	135 (84.9)
Used routine outcome measures e.g. PHQ-9, GAD-7	133 (83.7)
Disseminated research/evidence base relevant to clinical psychology e.g. through presenting reports and findings,	98 (61.6)
Conducted a service evaluation/improvement project	84 (52.8)
Supervised a research or service evaluation project	83 (52.2)
Submitted or published research of a quality to satisfy peer review	57 (35.9)
Conducted a clinical audit	47 (29.6)
Acted as part of a research team on a funded study	45 (28.3)
Designed a study	38 (23.9)
Acted as a reviewer for peer reviewed research	38 (23.9)
Collected data for use in research	36 (22.6)
Gathered descriptive data e.g. Millon clinical multiaxial inventory	34 (21.4)
Written up a study	33 (20.8)
Analysed data as part of a study	29 (18.2)
Written a research grant or proposal	25 (15.7)
Written or edited book chapters	23 (14.5)

What factors are associated with level of research related activity?

Demographic descriptive statistics and analyses are shown in Table 3. Level of research activity did not differ significantly between groups for: disability, sexuality, geographic location, socio-economic class, ethnicity, or field of role.

Variables for which statistically significant differences between groups were found were: gender, with level of research activity being higher in males than in females; publication of DClinPsy thesis, with level of research activity being higher in those who did publish; PhD, with level of research activity being higher in those who had a PhD; and primary employer.

For primary employer, pairwise comparisons using Dunn's (1964) procedure with a Bonferroni correction for multiple comparisons revealed statistically significant differences in research activity scores between university employees and NHS employees (p = .001), and university employees and other employers (p = .003). University employees reported the highest level of research related activity, followed by NHS employees, followed by other groups.

Table 3

Demographic analyses between groups for number of research activities in the past year

Variable	Category (*n*)	Median	Test statistic	Adjusted p value
Published thesis	Yes (*n* = 73)	8	*U* = 4193	*p* = .01**
	No (*n* = 86)	6		
Primary employer	NHS (*n* = 120)	7	*H* = 12.935	*p* = .01**
	University (*n* = 12)	12		
	Other (*n* = 27)	6		
Gender	*Male (n* = 23)	10	*U* = 2087.5	*p* = .03*
	Female (n = 136)	7		
PhD	Yes (*n* = 27)	10	*U* = 2309.5	*p* = .04*
	No (*n* = 132)	7		
Ethnicity	English, Welsh, Scottish, Northern Irish or British (*n* = 132)	7	*U* = 2155.5	*p* = .17
	Other (*n* = 27)	8		
Geographic location	England (*n* = 140)	7	*H* = 4.178.	*p* = .41
	Wales (*n* = 4)	9		
	Scotland (*n* = 11)	10		
	Other/Declined to say (*n* = 4)	6.5		
Sexuality	Heterosexual (*n* = 127)	7	*H* = 4.881	*p* = .43
	Bisexual (*n* = 14)	7.5		
	Gay/Lesbian (*n* = 6)	5.5		
	Pansexual (*n* = 3)	9		
	Prefer not to say (*n* = 9)	9		
First-generation university	Yes (*n* = 82)	7	*U* = 3425	*p* = .44
	No (*n* = 77)	7		
Field of role	Adult mental health (*n* = 39)	7	*H* = 3.586	*p* = .68
	Child and adolescent mental health (*n* = 29)	6		
	Learning disabilities (*n* = 15)	6		
	Health psychology (*n* = 23)	7		
	Other (*n* = 29)	7		
	Mixed (*n* = 24)	7.5		
Disability	Yes (*n* = 22)	7.5	*U* = 1553.5	*p* = .8
	No (*n* = 137)	7		

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

Descriptive statistics and Spearman correlation analyses for continuous and ordinal variables are presented in Table 4 and a correlation matrix (Table 5) respectively. Variables significantly correlated with level of research activity were: RTE (weak positive correlation), ROEs (moderate positive

correlation), self-efficacy (weak positive correlation), attitudes (moderate positive correlation), resources (moderate positive correlation), and support (moderate positive correlation).

RTE was positively correlated with ROEs and research self-efficacy, replicating Szymanski et al.'s (2007) findings. Furthermore, attitudes were moderately positively correlated with ROEs and research self-efficacy as reported by Szymanski et al. (2007).

Table 4

Descriptive statistics for continuous variables

Variable	M(SD)	Range
Research activity	7.82 (3.6)	1-18
RTE	63.77 (10.97)	36-84
ROEs	32.94 (5.61)	12-40
Self-efficacy	75.36 (16.17)	36-108
Attitudes	11.75 (2.31)	6-15
Resources	1.86 (.79)	1-4
Support	10.35 (2.66)	3-15
Age[a]	39.28 (7.56)	25-65
Years qualified	8.91 (7.43)	0-46

[a]Midpoints from categorical data have been used to calculate descriptive statistics

Table 5

Spearman correlation matrix

Variable	1	2	3	4	5	6	7	8
1. Research activity								
2. RTE	.201*							
3. ROEs	.433**	.240**						
4. Self-efficacy	.388**	.191*	.254**					
5. Attitudes	.524**	.114	.647**	.430**				
6. Resources	.482**	.161*	.239**	.240**	.244**			
7. Support	.563**	.212**	.399**	.225**	.283**	.550**		
8. Age	.0698	.0335	.03	-.061	-.012	.062	.075	
9. Years qualified	.099	.003	-0.111	-0.135	-.064	.039	.142	.756**

RTE: research training environment; ROEs: Research outcome expectations

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

Benjamini-Hochberg corrected p values

Regression model

Multiple regression was used to predict level of research activity from: DClinPsy thesis publication, attitudes, gender, self-efficacy, ROEs, RTE, resources, and support. Although non-parametric tests have been used for univariate analyses due to non-normality in the distribution of the dependent variable, a linear model was deemed appropriate due to normality of the residuals, as assessed by q-q plot, visual histogram examination of residual values and a Shapiro Wilk test of these $W(159) = .987$. $p = .166$. Other assumptions were checked as follows: linearity was assessed by visual inspection of scatterplots; there was independence of residuals, as assessed by a Durbin-Watson statistic of 2.26; there was homoscedasticity, as assessed by visual inspection and an F-test for heteroscedasticity result of $F = 2.13$ ($df1 = 1$) ($df2 = 157$) $p = .15$; there was also no evidence of problematic multicollinearity with all tolerance values above 0.1.

The multiple regression model significantly predicted research activity, $F(8,150) = 24.14$, $p < .001$. R^2 for the overall model was 56.3% with an adjusted R^2 of 53.9%, a large size effect according to Cohen (2013). Attitudes, gender, self-efficacy, resources, and support added statistically significantly to the prediction at $p = .05$ level, whilst DClinPsy thesis published, ROEs, and RTE did not when controlling for other variables. Regression coefficients and standard errors can be found in Table 6.

Table 6

Multiple regression results for research activity

Research activity	B	95% CI for B		SE B	β	R^2	ΔR^2
		LL	UL				
Model						.563	.539
Constant	-9.269***	-12.575	-5.963	1.673			
Published thesis	.507	-.331	1.344	.424	.070		
Attitudes	.436***	.206	.666	.116	.280***		
Gender	1.778**	.663	2.894	.565	.174**		
Self-efficacy	.034*	.006	.061	.014	.152*		
Outcome expectations	.006	-.086	.098	.047	.010		
RTE	.003	-.035	.040	.019	.009		
Resources	.659*	.059	1.259	.304	.146*		
Support	.486***	.302	.671	.093	.359***		

Note. Model= "Enter" method in SPSS statistics; B= unstandardised regression coefficient; CI= confidence interval; LL= lower limit; UL= upper limit; SEB= standard error of the coefficient; β= standardised coefficient; R^2 = coefficient of determination; ΔR^2= adjusted R^2.

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

What are the barriers and facilitators to involvement in research related activity?

Content analysis indicated that descriptions of barriers and facilitators fell broadly at antithetical ends of the same themes. Table 7 shows these themes with illustrative quotations, alongside the frequency with which they were reported. The most frequently reported facilitator and barrier to research related activity was time with resources second. Other frequently reported factors included opportunities for collaboration and flexible projects as well as organisational support, job roles which allow for research, and the research culture. Few participants reported personal attitudes as a barrier.

Table 7

Content analysis themes, quotations, and frequencies

Theme	Facilitators		Barriers	
	N (%)	Illustrative quotes	*N* (%)	Illustrative quotes
Time	102 (64.2)	*Research time allocated in my job plan* *Paid and protected time in post - this is very rare in NHS jobs*	103 (64.8)	*Time- work is more focused on clinical activity* *Having time and headspace*
Resources (including funding)	43 (27.0)	*Better access to journal articles* *Access to statistical analysis programmes* *GDPR compliant survey tools*	38 (23.9)	*Understaffing* *Lack of appropriate resources - i.e. statistical analysis programmes.* *Lack of junior psychology staff to collect data and analyse statistics*
Collaborators and mentors	35 (22.0)	*Closer links with university/academics* *Collaboration with someone more experienced* *Opportunities to be part of funded studies*	13 (8.2)	*No mentoring* *Lack of access to research networks*
Ethos and culture	21 (13.2)	*Re-embedding a culture of research into the NHS.* *Recognition that research is not an "extra", but is fundamental to good practice* *The perception that the research world is open to outsiders*	17 (10.7)	*A stance toward prioritising clinical care rather than research* *Research not being part of the culture of my service.* *The service focusing on solely the clinical role of psychology in just doing therapy.*
Organisational support	16 (10.1)	*Support from managers and NHS structures to promote AHPs doing research* *More support from manager*	19 (11.9)	*Not feeling supported by managers* *Lack of organisational support*
Flexible projects linked to clinical work	18 (11.3)	*Opportunities for innovative service development with a clear link between local/ICB/SNEE priorities and clinical research projects* *A project related to my work, based on data collected in my work base*	4 (2.5)	*A lack of flexible ways to do meaningful research over realistic timescales* *Lacking flexible ways to do NHS based research*
Job roles which facilitate research	14 (8.8)	*Taking up a part time research position* *Starting a funded PhD fellowship*	8 (5)	*Lack of opportunities for clinical-academic posts.* *Our team's focus is clinical, not research*
Processes	4 (2.5)	*Making ethics and local R&D applications easier, more user-friendly, and quicker*	12 (7.5)	*Long peer review process*

		Clear guidelines from research governance		*Infrastructure isn't there in terms of support or ethics committee*
Supervising trainees	12 (7.5)	*A trainee on placement with me* *Trainee project to supervise*	2 (1.3)	*No trainees*
Personal factors	0		10 (6.3)	*Mental capacity* *Personal ill health* *Protection of myself from burnout*
Confidence	1 (0.6)	*Feel more confident to go back to research*	8 (5.0)	*Lack of confidence in my research ability.*
Personal interest/ attitudes	5 (3.1)	*Opportunity to be involved in a project I actually love/am passionate about*	4 (2.5)	*It is just not an area of practice I am interested in carrying out* *Not having any firm ideas about future research areas*
Training	8 (5)	*CPD on modern statistical approaches* *Refresher training*	0	

Discussion

The present study offers broader conceptualisation of research activity in clinical psychology than much prior research. Under this definition, it appears that clinical psychologists are active in undertaking a range of activities that utilise their research skills. Furthermore, regression analysis found that attitudes, gender, self-efficacy, resources, and support were significant predictors of research related activity. Lastly, content analysis revealed time and resources were important barriers and facilitators to conducting research related activities. Overall, it appears that clinical psychologists are undertaking research related activities but may need support in several areas to provide more opportunities within their professional roles.

As other papers have indicated (Eke et al., 2012; Milne et al. 1990; Newman & McKenzie, 2011) we found that the modal number of publications from clinical psychologists was zero over the past year. Our primary finding concerning the high level of research related activity clinical psychologists are engaged with does not contradict this but rather offers more nuanced understanding of research output and engagement than implied by studies which examined only activities related to the publication of papers (Eke et al., 2012; Mallinckrodt & Gelso, 2002; Newman & McKenzie, 2011). It also replicates Barrom et al.'s (1988) findings that most clinical psychologists are involved to some degree in research activities and consumption.

Although the low proportion of publication related activity reported is an issue worthy of further investigation, it does appear that many clinical psychologists are utilising their training in research skills, therefore offering a return on the investment made in their doctoral training. However, it is not the case that this is the only route for clinicians to become research proficient, with other routes

such as NIHR fellowships, masters degrees and PhDs also equipping clinicians with the necessary skills and training.

Concurrently producing research and working clinically is a difficult endeavour which many UK systems such as the NHS are not always set up to support despite acknowledging the importance of doing so (Department of Health and Social Care, 2021; Mitchell & Gill, 2014; NHS England, 2019) and so it is perhaps unrealistic to expect all clinical psychologists to be producing published research papers. Other endeavours from smaller scale projects to consumption, utilisation, and dissemination of the evidence base are as important for the role of the clinical psychologist as a scientist-practitioner.

In univariate analysis, gender, primary employer, thesis publication, PhD, RTE, ROEs, self-efficacy, support, attitudes, and resources were all significantly associated with level of research related activity. Our regression model found that attitudes, gender, self-efficacy, resources, and support were significant predictors of level of research related activity when controlling for other variables. Previous research has found these factors to be associated with publication activity (e.g. Barrom et al., 1988; Eke et al., 2012; Holttum & Goble, 2006; Kahn, 2001; Szymanski et al., 2007) but our findings indicate that when considering research related activity more broadly, these factors remain important. This could also indicate that there is something similar about those who align more closely with the scientist-practitioner aspect of the clinical psychology role, even if not publishing research.

Future research could refine understanding of predictive factors and mediating influences of variables related to level of research activity. For example, in our regression model RTE was no longer a significant predictor when controlling for other variables. It is possible its influence is mediated by ROEs and self-efficacy as suggested by significant correlations in our results and those of other studies into research output (Kahn, 2001; Szymanski et al., 2007). However, Phillips and Russell (1994) found limited evidence for RTE in influencing research productivity suggesting it may not be of strong influence. This could be investigated further to inform ideas surrounding the usefulness of interventions at training environment level to increase research related activity in clinical psychologists.

Future research could also investigate the associations found in our exploratory analyses to better understand the role they play in level of research related activity; in particular, gender and area of

employment are under-researched areas. Gender was an especially strong predictor. This echoes the issue of female underrepresentation in research seen across the sciences (Huang, et al., 2020) but is particularly interesting given that UK clinical psychology is a female dominated profession. These findings also contradict those of Wright and Holltum (2012) who found no relationship between biological sex and research intention. It may be that gender does not influence research intention but does impact whether desire to conduct research is able to be actualised in the workplace. Future research in this area could consider contributory factors to this such as caring roles and parental responsibilities which disproportionally impact women in the workplace and career progression (Hochlaf et al., 2022; Probert, 2005).

The most commonly cited barrier and facilitator to future research related activity was time, replicating findings pertaining to publication related activity by Newman and Mackenzie (2011) and Holttum and Goble (2006). Time as a primary factor appears to have overlap with other barriers such as lack of staffing, and research culture (which are likely to influence the availability of time dedicated to research activities). The importance of resources and support are also reinforced by the results of our regression analysis and content analysis. This replicates findings from Barrom et al. (1988) in US clinical psychologists, Eke et al. (2012) in UK clinical psychologists and McHugh et al. (2016), in their survey of Irish clinical psychologists.

Implications

It appears that clinical psychologists value research related activities. Only a small percentage of participants cited personal factors such as low interest or personal value as a barrier to research related activity. Interventions to address limitations to time, resources, and support are therefore likely to be most impactful in increasing research related activities. Examples of this may include access to academic literature, training, support networks and collaborators. This echoes Barrom et al.'s (1988) finding that setting variables were the most important factor influencing scholarly achievement in clinical psychologists. Some of these resources e.g. training may also directly increase other important factors such as self-efficacy and attitudes. In practice, this could include training provided by employers but could also include other routes to refreshing and building research skills such as collaboration with other professionals and academics.

Another, consideration which may influence the availability and uptake of these resources appears to involve re-embedding of research into NHS culture. Many clinical psychologists work within the NHS, yet a consistent theme was that NHS culture does not value research as highly as clinical work.

This was often attributed to a view that research activities detract from clinical care, however, there is evidence that improved research culture may contribute to improved organisational performance (Hanney et al., 2013; Harding et al, 2016). It is understandable that carrying out large scale research is not feasible or appropriate in many clinically oriented posts. A shift to offering small scale research projects that are service based and immediately clinically relevant may encourage wider engagement. Additionally, university and research links in terms of mentoring and collaboration may increase confidence and support for smaller scale clinical projects. Opportunities for clinical psychologists to take smaller roles alongside research teams in larger scale projects is another strategy suggested by the National Institute for Health and Care Research (Arasaradnam et al., 2023). Innovations such as these may contribute to a cultural shift towards research, often a gradual process requiring change in the habits of individuals as well as organisational drivers.

Strengths and Limitations

Alongside the breath of research activities included, one strength of this study was the sampling method and representativeness of the sample, which enhances the generalisability of conclusions drawn. The broad sampling strategy resulted in a sample which appears representative of the profession of clinical psychology in the UK as compared to HCPC statistics (HCPC, 2023) despite being a relatively small sample (the Health and Care Professions Council estimated in 2019 that there were 13,381 clinical psychologists in the UK (Health Care Professions Council, 2019)).

Use of measures that have been previously validated offers some advantages regarding confidence in their reliability and validity (Boynton & Greenhalgh, 2004). However, as some of these questionnaires were developed for use in slightly different professional group such as trainees or counselling psychologists this may somewhat compromise their validity in a new sample. Additionally, use of self-report questionnaires introduces limitations such as social desirability bias (Van de Mortel, 2008) which we hope to have mitigated somewhat with the use of an anonymous questionnaire. Another area of weakness in the measurements used was an atheoretical attitudinal measure based on that used in Barrom et al. (1988). Use of a measurement based on an explicit attitudinal model such as that of Fishbein and Ajzen (1975) would have been more theoretically meaningful and able to inform predictions about future behaviour and intention. This should be considered for future research.

Additionally, operationalisation of the dependent variable is open to debate in terms of ecological validity. As the role of the clinical psychologist is one of a scientist-practitioner (Shapiro, 2002), bridging the gap between research and practice, overall number of research related activities

endorsed was thought to best represent this position as both a producer and implementor of research; this is as opposed to the elevation of publishing activity as 'higher' engagement with research as arguably, a clinical psychologist who does solely research is as detached from this role as a practitioner who does not consult the current research. Therefore, although it is rarely feasible for a single clinical psychologist to have done all activities in the list, whatever the primary work of the clinical psychologist (i.e. research or practicum heavy) it seems to follow that the more activities endorsed, the greater the embodiment of the scientist-practitioner role. However, it could also have been useful to operationalise this differently; for example, grouping participants into two categories of researcher-practitioners and not (i.e. those reporting solely research or solely practice based activities) or into three groups of researcher, practitioner, and researcher-practitioner. This could have been achieved by grouping of research related activities into categories a priori to create distinct groups. However, grouping participants in such a way may not hold validity due to creating arbitrary distinctions which may not represent real-world differences.

Another consideration concerning the dependent variable is the extent to which the measured behaviours can be said to demonstrate doctoral level research skills are being used. For example, reading a research paper is unlikely to require doctoral level research training. However, being able to critically evaluate and implement its findings appropriately may do. Our data does not provide this insight into the extent to which sophisticated research philosophy and integration skills are being actively utilised.

The use of regression analysis to further understand relationships in the data also comes with both strengths and limitations. Although it allows us to control for other variables thus reducing confounding data, it does also increase the risk of type 1 error and overfitting of data. To mitigate this, we have been cautious in our variable selection, only including variables of practical importance and using previous evidence to guide selection (rather than purely those which were significant from univariate analyses, thus somewhat mitigating the difficulties associated with multiple comparisons and so-called data-dredging (Gelman & Loken, 2013)). Additionally, we included statistical correction for multiple comparisons, adding to methodological rigour. This was particularly beneficial due to the relatively large number of exploratory variables considered.

Lastly, whilst the use of content analysis yielded potentially useful insights into the under-researched area of barriers and facilitators to research related activity, it should be noted that there are a larger number of themes than would be conventionally expected. It is hoped that in presenting the themes

concretely and descriptively they may translate more obviously into implementable, applicable points of intervention in clinical practice. However, it could be argued that this has limited the depth and integration of themes (Finlay, 2021).

Conclusion

Utilisation of research skills in clinical psychologists appears far higher than suggested by the oft cited statistic of zero modal publications. The role of the clinical psychologist is varied and requires a scientist-practitioner approach through many activities, which our findings reflect. Attitudes, gender, self-efficacy, resources, and support were found to be significant predictors of research related activity when controlling for other variables. Time and resources are considered to be important barriers to research related activity in clinical psychology practice and may be addressed by initiatives to incorporate research more flexibly into the work of clinical psychologists.

Statement of Contribution

Stevie Burnett: conceptualisation, methodology, data analysis, writing-original draft, project administration. **Dr Joanne Hodgekins:** conceptualisation, methodology, writing- review, supervision. **Dr Sarah Reeve:** conceptualisation, methodology, writing- review, supervision.

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Chapter 5

Discussion and critical evaluation

Word Count: 3970

This chapter discusses and evaluates the findings of the systematic review and empirical paper together. Furthermore, it situates findings within the current evidence base, considers their applications and implications for theory and practice, and makes suggestions for future research.

Personal rationale for the project

The researcher's experiences training and working as a psychotherapist and trainee clinical psychologist in the NHS (National Health Service) motivated their interest in this project. During psychotherapy training programmes she noticed a significant focus on the marrying of research, practice, and patient factors to inform good clinical practice. However, following qualification she noted sometimes negative and dismissive attitudes towards the evidence base in favour of intuition. She also observed great variability in how therapists kept abreast of research, integrated this into their practices, and made clinical decisions. The complexity of cases in day-to-day practice, many outside the scope of 'gold standard' (Hariton & Locascio, 2018) research evidence, make the role of a psychotherapist as a scientist-practitioner more dynamic and complicated than the evidence may imply. The current thesis portfolio was born out of a drive to better understand psychotherapists attitudes to evidence-based practice and how clinical psychologists use their research training post qualification.

The researcher's personal attitude to EBP holds the scientist-practitioner role at the heart of their clinical approach. To her this means thoughtful and critical appraisal of the research evidence and its applicability to unique clinical situations. It is essential that research is to inform practice, but it is also important to recognise the limits of evidence from RCTs and other gold standard evidence. Every eventuality in clinical practice cannot be predicted and studied and so good clinical judgement and ability to assimilate findings across different forms of research evidence is essential. Additionally, a pragmatic approach is important; an evidence-based intervention is only as useful as the client is willing to make use of it and so the ability to take a flexible, responsive approach is paramount. Doing this with a sound rationale in mind and with attention paid to clinician biases, emotions, and safety behaviours is key so as not to drift from the evidence base (as described by Waller and Turner's (2016) work on therapist drift) but deviate where indicated. She considers formulation-based approaches as recommended by the BPS (Division of Clinical Psychology, 2011) helpful to provide a framework through which to consider this and offer idiosyncratic approaches. For this reason, the concept of EBP made intuitive sense to her and she wanted to undertake research in this area.

Summary of findings

Systematic review

The systematic review paper aimed to identify, summarise, and critically evaluate literature pertaining to evidence-based practice (EBP) attitudes in psychotherapist populations. Nine studies were found to meet the inclusion criteria. Findings suggested that attitudes to EBP were largely positive when considering EBP as a tripartite model necessitating the integration of research evidence, clinical expertise, and patient preferences (APA Presidential Task Force on Evidence-Based Practice, 2006). Frequently endorsed attitudes included that EBP: improves client outcomes; improves quality of service; is ethical; and aids decision making.

Several studies found significant conflation of the terms EBP and empirically supported treatments (ESTs) amongst participants. Negative attitudes appeared to represent attitudes towards ESTs, which differ from EBP and have been criticised by practitioners as lacking in ecological validity (Jensen Doss et al., 2009; Shafran et al., 2009), being overly constraining (Simmons et al., 2008) and being compromising to the therapeutic relationship (Addis & Krasnow, 2000).

Findings were mixed regarding the relationship between attitudes and behaviour with one study finding some evidence of a correlation and two studies finding none. This relationship is studied further in the empirical paper where attitudes are considered as a predictor of research related activities.

Empirical paper

The primary aim of the empirical paper was to summarise and understand the types of research related activity in which qualified UK clinical psychologists are involved. The primary finding was that clinical psychologists are engaged in a range of activities which utilise their research expertise and training with the modal number of research related activities endorsed within the last year being 5. This provides a more nuanced understanding of the researcher-practitioner role and its utilisation than many other studies into the phenomenon of low research output in clinical psychologists (Eke et al., 2012; Newman & McKenzie, 2011).

Secondly, factors associated with higher levels of research related activity were gender, primary employer, thesis publication, research training environment, research outcome expectations, self-

efficacy, support, attitudes, and resources. The main predictors following regression analysis were attitudes, gender, self-efficacy, resources, and support. Furthermore, the most frequently highlighted barrier and facilitator to research related activity was time, with resources the second most cited.

Integrated findings

Both papers considered the role of the scientist-practitioner and how this relates to the realities of clinical practice. The first paper did so by seeking to understand the attitudes psychotherapists hold towards the process of marrying the evidence into clinical work through evidence-based practice. The second paper did so by seeking to understand the ways in which clinical psychologists make use of their research training, the factors associated with the extent to which they engage in research related activity, and barriers and facilitators to future activity.

In our empirical paper we found that attitudes towards the personal value of research were a significant predictor of research related activity and were also found to be broadly positive. This reinforces the argument that attitudes do play a role in predicting behaviour in the area of research behaviours. However, findings from our systematic review were mixed as to the influence of attitudes on behaviour, although few papers reported on this so this was a modest finding. Nevertheless, this indicates that there is more to do in understanding how positive attitudes may translate into increased research related activity and other EBP behaviours. Evidence from our empirical paper highlights other variables involved in predicting research related activity. These variables require further attention to understand how engagement with EBP and a scientist-practitioner approach may be embedded in psychotherapy professions, particularly clinical psychology.

What appeared clear in both the papers is that the scientist-practitioner ethos is still alive in psychotherapy and clinical psychology. In fact, with positive attitudes to evidence-based practice (and attitudes thought to be an antecedent to behaviour (Ajzen, 1991; Ajzen et al., 2018) and understanding of the wider range of research-based activity clinical psychologists engage in, it appears that appetite for working from an evidence based, scientist-practitioner framework is good. However, there is still room for improvement, particularly in understanding of how research might be used within an evidence-based practice framework and facilitation of research activity in groups such as NHS staff and women who appear to do less research related activity.

Critical review (strengths and limitations)

Systematic review

The study protocol was developed using PRISMA (preferred reporting items for systematic reviews and meta-analyses) guidance (Moher et al., 2009). Fidelity to this guidance helped to ensure transparency and complete recording. Whilst providing a clear framework to aid the researchers in being as comprehensive, objective, and systematic as possible, it also allows the wider research community to evaluate and replicate findings (Page et al., 2021). Registration on the international prospective register of systematic reviews (PROPSPERO) where the protocol can be openly consulted by other researchers and interested parties furthers this transparency and avoids duplication of review projects, again of benefit to the scientific community (Stewart et al., 2012). These considerations are a strength of the systematic review.

Utilising mixed methods methodology allowed for a broader lens through which to consider the phenomena of interest (EBP attitudes in psychotherapists). There are benefits and drawbacks to this approach. Use of a mixed methods approach allowed synthesis of a small body of literature which included qualitative and quantitative studies and enabled better understanding of possible explanations for heterogeneity in reported attitudes towards EBP (Hong, 2023). This advantage was evident in that the inclusion of qualitative papers demonstrated that there still appeared to be conflation about EBP in the data collected despite the papers being specific about their definitions of this. This information prompted us to also question whether the quantitative approaches have strong validity in whether their results truly demonstrate EBP attitudes (or whether participants here may also have conflated the two terms).

Guidance from Popay et al. (2006) was used to support methodological rigour. However, the somewhat iterative nature of the narrative synthesis process does reduce transparency and replicability (Higgins & Green, 2008; Petticrew et al., 2013). Due to the ambiguity of definitions in the literature, particularly surrounding the term EBP, broad search terms were constructed, and three databases were searched. Casting of a wide net coupled with adherence to an a priori inclusion/exclusion criteria was intended to reduce the risk of identification bias through comprehensive study identification. However, whilst the definition of attitudes and evidence-based practice were tightly defined, the psychotherapist population criterion was left broader to be tightened later. Although the rationale for this was due to concerns about scarcity of relevant literature in the area, flexibility in the inclusion/exclusion criteria leaves room for researcher bias and

is a limitation of this study (McDonagh et al., 2013). This approach also left a large number of papers to be screened at title and abstract level. Whilst this increased the certainty that relevant papers were not missed in the screening process, it is likely that tighter selection criteria would have decreased the outlay of researcher time without compromising the scope of the search.

Furthermore, inclusion of the wider professional group of psychotherapists instead of clinical psychologists consistent with the empirical paper may have diluted the impact of this research and synergy between the two papers. However, to have only included qualified clinical psychologists would have resulted in just three studies for inclusion. Although there is no minimum number of papers required for a systematic review, such a low number would have greatly limited the strength of any conclusions drawn.

Screening of a portion of papers by a second rater at study selection and quality appraisal stage aided in reducing selection bias. Ideally this would have been done for all papers, however, this was outside the scope of the study. Inclusion of grey literature such as unpublished theses may have reduced the risk of publication bias (Paez, 2017) but was also outside the scope of this study. As researchers inevitably bring their own experiences to the interpretative process the study could also have been improved by involving a second person in data synthesis (Harden & Thomas, 2005; Hong, 2023). However, the researcher did keep this under consideration throughout the review and strived to bracket their personal biases, motivations, and assumptions throughout the review process (Ahern, 1999).

Another limitation of the study was the heterogeneity in measures of EBP. This impedes cohesive comparison across studies by virtue of introducing potential confounding factors. This may have impacted the validity of our results as we can be less sure that the included studies are measuring the same phenomena. In particular, some measures made explicit the definition of EBP and others did not which means we cannot be sure that all participants fully understood what they were being asked to report on.

Another potential limitation of the systematic review is the lack of practical utility. Although attitudes appear to be positive, we do not know enough from this review about what influences attitudes and whether attitudes translate into behaviour to make strong implementation suggestions. However, results from the empirical paper suggest a stronger relationship between attitude and behaviour.

Empirical paper

A strength of this study was the demographically representative sample of UK clinical psychologists and an adequate sample size for appropriately powered statistical analysis.

Another key strength was the novel approach to operationalising research related activity. This addresses a limitation of existing literature examining research productivity in clinical psychologists to date. This broader, more nuanced definition holds greater ecological validity pertinent to the realities of operating as a qualified clinical psychologist. It also leads to the formation of more informed ideas around how to understand and increase clinical psychologist's opportunities to utilise their research acumen and operate from a scientist-practitioner framework. From here, clinical psychologists and the systems that they work within can solidify thinking and initiatives as to what a realistic aim is for the practicing clinical psychologist. It may not be that the range of activities should increase but the quantity. For example, it may be impractical for a clinical psychologist in a heavily clinical role to undertake new activities such as conducting research projects, but it may be the case that they could increase the amount of literature they consume and use it more frequently in their supervisory work.

One limitation of the empirical paper is the self-report survey methodology. Survey methodology is prone to self-report biases such as social desirability and recall bias (Althubaiti, 2016; Bound et al., 2001). The anonymity of the survey is thought to reduce the level of social desirability bias (Podsakoff et al., 2012). However, future studies may benefit from developing measures which use other sources of information such as colleague reports and job descriptions.

Additionally, alternative methodologies such as qualitative interviews may generate more detailed information about how clinical psychologists use their research skills in practice and embody the scientist-practitioner role. To reduce this to behaviours e.g. reading research papers is useful but does not tell us intimately how research skills are being used and applied. It also does not provide insight into the research philosophy and integration skills of clinicians e.g. reading a research paper and blindly applying it would be considered a research activity in our paper but is the antithesis of a scientist-practitioner, EBP approach.

Implications

Theoretical

This body of work updates the story of the scientist-practitioner model (Jones & Mehr, 2007; Shapiro, 2002) and how it fits with modern clinical practice. The empirical paper replicates findings that the number of research papers published by clinical psychologists is zero (Eke et al., 2012; Milne et al. 1990; Newman & McKenzie, 2011) but furthers understanding regarding how clinical psychologists actually utilise their research training and acumen, embodying the scientist-practitioner role. When considering a wider definition of research related activities, research engagement appears to be higher. This replicates Barrom et al.'s (1988) findings from US clinical psychologists in a twenty-first century UK sample.

Several factors were found to be associated with level of research activity. Gender, attitudes, self-efficacy, resources, and support were found to be related to level of research activity as found in previous studies (Barrom et al., 1988; Eke et al., 2012; Holttum & Goble, 2006; Kahn, 2001; Szymanski et al., 2007). Our study builds on previous findings by providing evidence that these variables also predict level of research related activity (not just publications).

We also found that research outcome expectations (ROEs) and research training environment (RTE) were not significant predictors of level of research activity in our regression model when controlling for other variables. RTE has been found to be related to level of research output in several studies (Kahn, 2001; Szymanski et al., 2007) but Phillips and Russell (1994) have suggested it is of limited influence. Our findings replicate this, but RTEs correlations with other variables suggest its influence may be mediated by factors such as self-efficacy. This warrants further investigation to better understand the role of RTE in predicting research activity.

When thinking about how psychotherapists marry research and practice, EBP has been considered in terms of psychotherapist attitudes which were found to be positive. This reveals a more positive picture than is sometimes suggested in the literature (Addis et al., 1999; Baker et al., 2008). Attitudes have been shown in our empirical paper to be positively associated with evidence-based practice and associated research related activities. This aligns with the large body of evidence indicating attitudes to ESTs are associated with their use (Becker & Jenson-Doss, 2013; Beidas et al., 2012; Leathers & Strand, 2013). There is also some evidence from our systematic review to indicate this may not be the case, however this was a modest finding from only two studies. Regardless, attitudes are only

one part of the picture. Evidence from our regression analysis suggests there may be more influential variables such as support, which had a larger standardised β coefficient in the regression analysis.

For practice, service delivery, and service development

This body of work indicates that attitudes to evidence-based practice are positive overall, and level of research related activity is fairly high. This emphasises the need for a strong research education for clinical psychologists and opportunities for them to use these skills to develop their knowledge and implementation of the evidence base in their profession. The level of research training and acumen embedded in the training and approach of clinical psychologists is a key benefit of the role with a unique contribution to the mental health workforce.

However, the empirical paper highlights many barriers and potential facilitators to research related activity which require consideration in clinical practice and service delivery. Frequent factors identified were time, access to resources (such as academic journals and statistical packages), smaller scale opportunities, and opportunities for collaboration. Furthermore, re-embedding of research into the culture of the NHS was a frequently cited facilitator to further research related activity. These findings provide insight into factors which may facilitate research related activity and evidence-based practice behaviours in clinical psychologists in a way which is relevant to and embedded within clinical practice.

As the sample was largely NHS based, we will focus discussion on considerations for NHS services. Time was a major barrier to conducting further research related activities. Pragmatic initiatives to address this are likely to be twofold. Firstly, this could be addressed by ringfencing time for research activities by clinical psychologists; however, this would necessitate either de-prioritisation of other duties or backfilling of roles to facilitate this, something which service leaders may be reluctant to do in the current NHS climate (Iacobucci, 2021). Other initiatives which would still require some time commitment but possibly less so are smaller scale opportunities and collaborations, and supervision of service related projects and doctoral theses. Neglecting to create time and opportunity for this is shortsighted given the documented benefits of EBP and research in healthcare settings in terms of improved organisational performance, efficiency, and outcomes (Daleiden et al., 2006; Hanney et al., 2013; Harding et al., 2016; Holmqvist et al., 2015; Huppert et al., 2006).

A related and prevalent theme was the research culture within the NHS, with the NHS being said not to value research activity as highly as clinical work. However, research related activity is clinical work.

The role of the clinical psychologist as a scientist-practitioner necessitates the integration of research evidence and the ability to conduct research related activities. Research culture can be thought of as an organisational attitude (Whelan, 2016), and it appears a cultural shift may be needed to facilitate implementation of the above suggestions. One way this could be achieved is for clinical psychologists to advocate for the importance of research and its integration into practice within their organisations. Championing and publicising this aspect of the clinical psychologists' identity within wider systems and organisations may create opportunities for them to make more use of this skillset and for systems, in turn, to commit to resourcing research related activity more robustly. Ongoing drives to increase psychology representation on mental health trust boards may also help to target this from a top-down perspective.

One means through which research culture may shift is through the ongoing work of the National Institute for Health and Care Research (NIHR), established in 2006, who oversee how clinical research is prioritised, allocated, funded, and disseminated in the NHS. It recognises the need to integrate research experiences throughout the day-to-day work of health and social care professionals (NIHR, 2021) however, our content analysis would suggest that this ethos may not yet have found its way into the daily practice of clinical psychologists. The NIHR Mental Health Incubator also aims to increase research in mental health through facilitating connection between researchers, sharing training, funding and collaboration opportunities and offering practical advice for researchers.

Suggestions for further research

The dearth of research into attitudes towards EBP and conflicting literature on how attitudes translate into EBP and research related behaviours should be addressed to better understand their role. This could be achieved by refining of the measures used to assess attitudes to EBP, uniformity in how EBP is defined and differentiated from other concepts such as empirically supported treatments and manuals, and targeted consideration of negative attitudes and their role in relation to evidence-based practice behaviours and research related activity. It would also be helpful to understand contributors to attitudes to understand how they might be influenced positively and understood, for example in the clinical psychology training selection processes.

Additionally, the systematic review highlighted the need to develop methods to understand minority negative attitudes to EBP. EST literature indicates that positive and negative attitudes are not

mutually exclusive and have been found to predict unique proportions of variance in predicting EST use (Nelson & Steele, 2007). If this is also the case for EBP, then it is likely that negative attitudes may have been obscured by the largely positive attitudinal picture. This may be understood by closer examinations of data collected using current attitudinal measures e.g. histograms of Likert scale responses or the design of new measures intended to be more sensitive or specific to negative attitudes.

Another area for further research is to understand the research culture in the NHS and how this influences research related activity opportunities for clinical psychologists. Although time is often cited as a barrier to research, our content analysis suggests that underlying this may be a prioritisation within the NHS of other tasks e.g. clinical contact and supervision, with little ringfenced opportunity for research related activity. Understanding the culture and how this sits within the well documented pressures of NHS mental health systems will be essential to understand how shifts can be made. Studies could involve investigating management and leader attitudes. Another avenue could be to better understand the systemic expectations on how clinical psychologists spend their time. This could be done via qualitative methodology such as interviews or review of job plans and descriptions.

Univariate analysis also found that employer was significantly correlated with research activity, with NHS employees endorsing less research related activities than university employees. Although this would be unsurprising when considering research publication, we have found that this also extends to other research related activities. It would be helpful to consider NHS employees research-related activities in comparison to employees outside of university setting. This was not possible as part of this study due to low numbers of other employee groups. However, further research in this area may inform hypotheses about systemic factors within the NHS which impede higher levels of research activity. This can be considered in relation to Aaron's (2004) findings that therapists working in less bureaucratic organisations tended to have more favourable attitudes to research, and survey evidence that some NHS physicians view evidence-based practice as a bureaucratic exercise (Harrison & Dowswell, 2002). Conversely, other studies have shown that NHS therapists were more likely to use clinical guidelines (Aarons, 2004), to use research, and have a positive attitude toward research (Gyani et al., 2014).

Another area for further research is the role of gender in predicting research related activity. Gender was strongly associated with level of research activity in the results of our empirical paper, despite

there being some evidence that biological sex does not correlate with intention to do research (Wright and Holltum, 2012). Further research could seek to identify other factors which may reduce the likelihood that women are able to engage with research related activities to the extent they might wish to. Such factors may include caring roles and parental responsibilities which often disproportionally impact women in the workplace (Hochlaf et al., 2022; Probert, 2005). Mentorship programmes for female clinical psychologists may also support in this area.

Conclusion

This thesis portfolio aims to provide a more nuanced examination of the role of the scientist-practitioner model in modern practice. The systematic review does so by understanding psychotherapist attitudes to EBP. The empirical paper does so by better understanding how clinical psychologists use their research skills to undertake research related activity in their professional duties, before seeking to understand associated factors and barriers to future activity.

The findings contribute to existing work by updating our understanding of how clinical psychologists use their research skills as scientist-practitioners and by providing suggestions and insight into how to support them in doing so. It is hoped that this body of work will contribute to understanding of research in clinical psychology for services and other professionals as well as offer insight and suggestions into how to bolster opportunities for clinical psychologists to be involved in research related activities. This in turn, is hoped to ultimately improve outcomes for the people and communities that the clinical psychology profession serve.

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Appendices

Appendix A: Author guidelines for BPS Journal Psychology and Psychotherapy: Theory, Research and Practice

PAPTRAP AUTHOR GUIDELINES

Sections

1. SUBMISSION

Authors should kindly note that submission implies that the content has not been published or submitted for publication elsewhere except as a brief abstract in the proceedings of a scientific meeting or symposium.

New submissions should be made via the Research Exchange submission portal. You may check the status of your submission at any time by logging on to submission.wiley.com and clicking the "My Submissions" button. For technical help with the submission system, please review our FAQs or contact submissionhelp@wiley.com.

All papers published in the *Psychology and Psychotherapy: Theory Research and Practice* are eligible for Panel A: Psychology, Psychiatry and Neuroscience in the Research Excellence Framework (REF).

Data protection:

By submitting a manuscript to or reviewing for this publication, your name, email address, and affiliation, and other contact details the publication might require, will be used for the regular operations of the publication, including, when necessary, sharing with the publisher (Wiley) and partners for production and publication. The publication and the publisher recognize the importance of protecting the personal information collected from users in the operation of these services, and have practices in place to ensure that steps are taken to maintain the security, integrity, and privacy of the personal data collected and processed. You can learn more at https://authorservices.wiley.com/statements/data-protection-policy.html.

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This journal will consider for review articles previously available as preprints. Authors may also post the submitted version of a manuscript to a preprint server at any time. Authors are requested to update any pre-publication versions with a link to the final published article.

2. AIMS AND SCOPE

Psychology and Psychotherapy: Theory Research and Practice (formerly The British Journal of Medical Psychology) is an international scientific journal with a focus on the psychological and social processes that underlie the development and improvement of psychological problems and mental wellbeing, including:

• theoretical and research development in the understanding of cognitive and emotional factors in psychological problems;
• behaviour and relationships; vulnerability to, adjustment to, assessment of, and recovery (assisted or otherwise) from psychological distresses;
• psychological therapies, including digital therapies, with a focus on understanding the processes which affect outcomes where mental health is concerned.

The journal places particular emphasis on the importance of theoretical advancement and we request that authors frame their empirical analysis in a wider theoretical context and present the theoretical interpretations of empirical findings.

We welcome submissions from mental health professionals and researchers from all relevant professional backgrounds both within the UK and internationally.

In addition to more traditional, empirical, clinical research we welcome the submission of

- systematic reviews following replicable protocols and established methods of synthesis
- qualitative and other research which applies rigorous methods
- high quality analogue studies where the findings have direct relevance to clinical models or practice.

Clinical or case studies will not normally be considered except where they illustrate particularly unusual forms of psychopathology or innovative forms of therapy and meet scientific criteria through appropriate use of single case experimental designs.

All papers published in *Psychology and Psychotherapy: Theory, Research and Practice* are eligible for Panel A: Psychology, Psychiatry and Neuroscience in the Research Excellence Framework (REF).

3. MANUSCRIPT CATEGORIES AND REQUIREMENTS

- Articles should adhere to the stated word limit for the particular article type. The word limit excludes the abstract, reference list, tables and figures, but includes appendices.

Word limits for specific article types are as follows:

- Research articles: 5000 words
- Qualitative papers: 8000 words

- Review papers: 6000 words
- Special Issue papers: 5000 words

In exceptional cases the Editor retains discretion to publish papers beyond this length where the clear and concise expression of the scientific content requires greater length (e.g., explanation of a new theory or a substantially new method). Authors must contact the Editor prior to submission in such a case.

Please refer to the separate guidelines for Registered Reports.

All systematic reviews must be pre-registered and an anonymous link to the pre-registration must be provided in the main document, so that it is available to reviewers. Systematic reviews without pre-registration details will be returned to the authors at submission.

Brief-Report COVID-19

For a limited time, the *Psychology and Psychotherapy: Theory, Research and Practice* are accepting brief-reports on the topic of Novel Coronavirus (COVID-19) in line with the journal's main aims and scope (outlined above). Brief reports should not exceed 2000 words and should have no more than two tables or figures. Abstracts can be either structured (according to standard journal guidance) or unstructured but should not exceed 200 words. Any papers that are over the word limits will be returned to the authors. Appendices are included in the word limit; however online supporting information is not included.

4. PREPARING THE SUBMISSION

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Acknowledgments

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- **Numbers:** numbers under 10 are spelt out, except for: measurements with a unit (8mmol/l); age (6 weeks old), or lists with other numbers (11 dogs, 9 cats, 4 gerbils).

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Appendix B: Systematic review protocol

PROSPERO
International prospective register of systematic reviews

What attitudes do psychotherapists hold towards evidence based practice? A systematic review

Stevie Burnett, Joanne Hodgekins, Sarah Reeve

Citation

Stevie Burnett, Joanne Hodgekins, Sarah Reeve. What attitudes do psychotherapists hold towards evidence based practice? A systematic review. PROSPERO 2023 CRD42023421135 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023421135

Review question

What attitudes do psychotherapists hold towards evidence based practice?

Searches

Searches have not yet been conducted. Searches will be performed via PsycINFO, MEDLINE, and CINAHL databases. Reference lists of included papers will also be screened.
Peer reviewed literature utilising any research design will be included. There will be no restrictions on publication date. Grey literature will not be searched.

Types of study to be included

Peer reviewed literature utilising any research design will be included (qualitative, quantitative and mixed methods). There will be no restrictions on publication date. Grey literature will not be searched.

Condition or domain being studied

Evidence based practice has been defined as "the conscientious, explicit, judicious use of current best evidence in making decisions about the care of individual patients" (Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996). This approach is thought to improve clinical effectiveness in a number of ways.
It is comprised of three main facets: research evidence, clinical expertise, and patient preferences.

However, attitudes regarding use of evidence based practice in real-world clinical practice are suggested to be mixed among clinicians. This carries potential problems; if clinicians aren't utilising the evidence base effectively in their clinical work, then services and service users may be receiving less than optimal care.
The study will be examining attitudes to evidence based practice: measures of this will include: questionnaire data, survey data, interview data, focus group data. Grey literature will not be searched.

Participants/population

The sample will include all of those who can be reasonably understood to practice psychotherapeutically. This will include: clinical psychologists, psychotherapists, occupational therapists, social workers, counsellors, psychologists, occupational therapists. It will not include paraprofessionals such as psychological wellbeing practitioners and assistant psychologists, as they are unlikely to have received any formal therapy training and do not have a core profession. Psychaitrists will be included provided the study evidences that a psychotherapy approach is being considered in terms of attitude measurement (rather than examining attitudes to pharmacological evidence based practice). Where unclear, this will be ascertained by

role descriptions within the included papers.

Intervention(s), exposure(s)

Attitudes will be defined as emotions, beliefs, ideas, and behaviours pertaining to evidence-based practice (as defined by Sackett et al. (1996))

Comparator(s)/control

Not relevant

Main outcome(s) [1 change]

Data will be sought regarding attitudes of psychotherapists to evidence based practice. This is directly relevant to patient health outcomes because evidence-based practice has been shown to improve outcomes for patients.

If we can better understand the attitudes psychotherapists hold with regards to evidence based practice, then we can understand how evidence based practice is applied to (and research translated into) direct patient work. This may then lead to recommendations and strategies to further implement the use of evience based practices and, therefore, improve patient outcomes in psychotherapy.

Measures of effect

Establishing attitudes of psychotherapists to evidence based practice.

There is likely to be a range of study designs and outcomes within the selected papers. Outcome data will include: means from standardised questionnaires and key themes from qualitative analyses.

Additional outcome(s)

No additional outcomes are being considered

Data extraction (selection and coding)

Data management
Data extracted from the selected papers will be extracted and recorded in a Microsoft excel document. This will later be extracted to a Microsoft word document for review and write up of the analysis.

Selection process
Screening and selection will be conducted by the primary researcher and reviewed (non-blinded) by one or more of the secondary reviewers.

Databases will be searched using the provided search strategy. All studies will be screened at the title/ abstract level and duplicates and those not meeting the eligibility criteria will be removed. Additionally, retained studies will have their reference lists screened for eligible studies. Following this, the full text articles will be screened. The software EndNote will be used to facilitate this process.

Data collection process
Screening and selection will be conducted by the primary researcher and then 20% of papers sifted at full text level will be reviewed (non-blinded) by a second reviewer for reliability. Disagreements will be resolved via discussion with a third reviewer.

Efforts will be made to obtain missing data from the original authors and affiliated organisations. For instances of missing data, this will be included within the discussion section of the paper with attempts to understand how this may have influenced the final results.

A standardised form will be used to aid screening and allow review of the studies. The main information recorded will be: study setting, demographic participant information, sample size, measure of attitudes used, study design, type of analysis, key findings. Relevant additional information will also be recorded as appropriate.

Risk of bias (quality) assessment

The Mixed Methods Appraisal Tool (MMAT) will be used to appraise the quality of included studies.

Strategy for data synthesis [change]

Search results will be imported to a reference manager system where duplicates will be deleted and papers hand screened following this.

Following study screening, data will be synthesised providing there are greater than 5 studies fulfilling inclusion criteria.

Outcomes relating to attitudes of psychotherapists to evidence based practice will be included in the synthesis. There is likely to be a range of study designs and outcome types within the selected papers. Outcome data will include: means from standardised questionnaires and key themes from qualitative analyses.

A narrative approach will be utilised to combine individual study data, in accordance with guidelines by Popay et. al, 2006). This is the most suitable method as it is likely that research articles included with use varying methodologies and outcome data.

The narrative synthesis will be conducted by the main researcher and reviewed for discrepancies via discussion with the remaining review team members.

Analysis of subgroups or subsets

None planned.

Contact details for further information

Stevie Burnett
bpe19hxu@uea.ac.uk

Organisational affiliation of the review

UEA
https://www.uea.ac.uk/

Review team members and their organisational affiliations

Ms Stevie Burnett. UEA
Dr Joanne Hodgekins. UEA
Dr Sarah Reeve. UEA

Type and method of review

Narrative synthesis, Systematic review

Anticipated or actual start date

04 September 2023

Anticipated completion date

04 March 2024

Funding sources/sponsors

The review will be conducted as part of the course requirements for the UEA (University of east Anglia) Doctorate in Clinical Psychology award (funded by NHS England)

Conflicts of interest

Language

English

Country

England

Stage of review

Review Ongoing

Subject index terms status

Subject indexing assigned by CRD

Subject index terms

Attitude; Evidence-Based Practice; Humans; Psychotherapists; Psychotherapy

Date of registration in PROSPERO

25 September 2023

Date of first submission

02 September 2023

Stage of review at time of this submission

The review has not started

Stage	Started	Completed
Preliminary searches	No	No
Piloting of the study selection process	No	No
Formal screening of search results against eligibility criteria	No	No
Data extraction	No	No
Risk of bias (quality) assessment	No	No
Data analysis	No	No

The record owner confirms that the information they have supplied for this submission is accurate and complete and they understand that deliberate provision of inaccurate information or omission of data may be construed as scientific misconduct.

The record owner confirms that they will update the status of the review when it is completed and will add publication details in due course.

Versions

25 September 2023

Appendix C: MMAT scores

Domain	Criteria	Luebbe et al., 2007	Arumugam et al., 2018	Middleton et al., 2020	Rodriguez-Soto et al., 2015	Parrish & Rubin, 2012	Pagoto et al., 2007	Williams et al., 2021	Wilson et al., 2009	Okamura et al., 2019
Screening	Are there clear research questions?	+	+	+	+	+	+	+	+	+
	Do the collected data allow to address the research questions?	+	+	+	+	+	+	+	+	+
Qualitative Studies	Is the qualitative approach appropriate to answer the research question?						+		+	
	Are the qualitative data collection methods adequate to address the research question?						?		+	
	Are the findings adequately derived from the data?						+		+	
	Is the interpretation of results sufficiently substantiated by data?						+		+	
	Is there coherence between qualitative data sources, collection, analysis and interpretation?						+		+	
Non-Randomised Studies	Are the participants representative of the target population?		?							
	Are measurements appropriate regarding both the outcome and intervention (or exposure)?		+							
	Are there complete outcome data?		?							
	Are the confounders accounted for in the design and analysis?		-							
	During the study period, is the intervention administered (or exposure occurred) as intended?		+							
Quantitative Studies	Is the sampling strategy relevant to address the research question?	+		+	+	+		+		?
	Is the sample representative of the target population?	?		+	-	+		?		+
	Are the measurements appropriate?	?		+	+	+		+		+
	Is the risk of nonresponse bias low?	-		+	?	+		?		+
	Is the statistical analysis appropriate to answer the research question?	+		+	+	+		+		+
Percentage score		40%	40%	100%	60%	100%	80%	60%	100%	80%

+= yes, -= no, ?= can't tell

Appendix D: Patient consent form text

I understand the purpose of the study, what I will be asked to do, and any risks/benefits involved

I have read the Participant Information Statement and have been able to discuss my involvement in the study with the researchers if I wished to do so.

The researchers have answered any questions that I had about the study and I am happy with the answers.

I understand that being in this study is completely voluntary and I do not have to take part. My decision whether to be in the study will not affect my relationship with the researchers or anyone else at the University of East Anglia now or in the future.

I understand that I may stop the survey at any time if I do not wish to continue. I also understand that I may refuse to answer any questions I don't wish to answer.

I understand that my survey responses are anonymous and so it will not be possible to withdraw my responses

I understand that information about me that is collected over the course of this project will be stored securely and will only be used for purposes that I have agreed to. I understand that information about me will only be told to others with my permission, except as required by law.

I understand that the results of this study may be published, but these publications will not contain my name or any identifiable information about me.

I understand that the results of this study will be used for dissertation assessment and may be published but that any publications will not contain my name or any identifiable information about me.

The data collected in this study may be deposited with a repository to allow it to be made available for scholarly and educational purposes, but the data will not contain my name or any identifiable information about me.

I confirm that I satisfy the criteria for participation in this study

I consent to take part in this survey Yes/No

Appendix E: Participant information sheet

Stevie Burnett
Trainee Clinical Psychologist

08/01/23

Version 1.1

Faculty of Medicine and Health Sciences
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Exploring post-qualification research activity in UK Clinical Psychologists

PARTICIPANT INFORMATION SHEET

(1) What is this study about?
You are invited to take part in a research study designed to explore the types of research activity that qualified clinical psychologists in the UK are engaged. The study also aims to explore factors predicting these activities and the barriers and facilitators towards future involvement.

You have been invited to participate in this study because you are a qualified clinical psychologist working in the UK. This Participant Information Sheet tells you about the research study. Knowing what is involved will help you decide if you want to take part in the study. Please read this sheet carefully and ask questions about anything that you don't understand or want to know more about.

Participation in this research study is voluntary. By giving consent to take part in this study you are telling us that you:

- ✓ Understand what you have read.
- ✓ Agree to take part in the research study as outlined below.
- ✓ Agree to the use of your personal information as described.
- ✓ You have received a copy of this Participant Information Sheet to keep.

(2) Who is running the study?
The study is being carried out by the following student: Stevie Burnett who is conducting this study as the basis for the degree of Doctorate in Clinical Psychology at the University of East Anglia.

This study will take place under the supervision of Dr Joanne Hodgekins (J.Hodgekins@uea.ac.uk) and Dr Sarah Reeve (sarah.reeve@uea.ac.uk)

(3) What will the study involve for me?
You will be asked to complete an anonymous online survey.

Questions will cover information about research in your work, your previous experiences, attitudes, and self-efficacy. Response will include a mixture of tick box, Likert type scale, and free text responses.

(4) How much of my time will the study take?
The survey should take no more than 20 minutes to complete.

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(5) Do I have to be in the study? Can I withdraw from the study once I have started?
Being in this study is completely voluntary and you do not have to take part. Your decision whether to participate will not affect your current or future relationship with the researchers or anyone else at the University of East Anglia now or in the future.

One you have begun the survey you may stop at any point.

(6) What are the consequences if I withdraw from the study?
If you decide to take part in the study and then change your mind, you are free to withdraw at any time before you have submitted the questionnaire. However, your responses may still be recorded. As your responses will be fully anonymised, it will not be possible for you to withdraw your responses.

(7) Are there any risks or costs associated with being in the study?
Aside from giving up your time, we do not expect that there will be any risks or costs associated with taking part in this study.

(8) Are there any benefits associated with being in the study?
Your participation in the study will contribute towards the research base in clinical psychology.

You will also have to option to be entered into a prize draw to win one of twenty £10 Amazon vouchers as a thank you for your participation.

(9) What will happen to information provided by me and data collected during the study?
Everything you tell us will be kept confidential. This means that only the research team will have access to anonymised survey responses. We will not be asking for your name or any other personally identifiable details. You may choose to enter you email address in order to be entered into the prize draw. If you provide it, your email address will be collected and stored separately from your survey responses. Your email address will be deleted once winners have been drawn and contacted.

Your personal data and information will only be used as outlined in this Participant Information Sheet, unless you consent otherwise. Data management will follow the Data Protection Act 2018 (DPA 2018) and UK General Data Protection Regulation (UK GDPR), and the University of East Anglia's Research Data Management Policy.

The information you provide will be stored securely and your identity will be kept strictly confidential, except as required by law. Study findings may be published, but you will not be identified in these publications if you decide to participate in this study.

Study data may also be deposited with a repository to allow it to be made available for scholarly and educational purposes. The data will be kept for at least 10 years beyond the last date the data were accessed. The deposited data will not include your name or any identifiable information about you.

(10) What if I would like further information about the study?
When you have read this information, the research team (stevie.burnett@uea.ac.uk j.hodgekins@uea.ac.uk sarah.reeve@uea.ac.uk) will be available to discuss it with you further and answer any questions you may have about the study.

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(11) Will I be told the results of the study?
You are not able to receive feedback about the overall results.

(12) What if I have a complaint or any concerns about the study?
If there is a problem, please let me know. You can contact me via the University at the following address:
Stevie Burnett
Norwich Medical School
University of East Anglia
NORWICH NR4 7TJ
Stevie.burnett@uea.ac.uk

If you would like to speak to someone else, you can contact my supervisor:
Dr Joanne Hodgekins at j.hodgekins@uea.ac.uk

If you are concerned about the way this study is being conducted or you wish to make a complaint to someone independent from the study, please contact the Programme Director Dr Niall Broomfield n.broomfield@uea.ac.uk

(13) How do I know that this study has been approved to take place?
To protect your safety, rights, wellbeing and dignity, all research in the University of East Anglia is reviewed by a Research Ethics Body. This research was approved by FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee)

(14) OK, I want to take part – what do I do next?
If you are happy and consent to take part in the study simply click forward below to access the survey and answer the questions. By submitting your responses you are agreeing to the researcher using the data collected for the purposes described above.

(15) Further information
This information was last updated on 08/01/23

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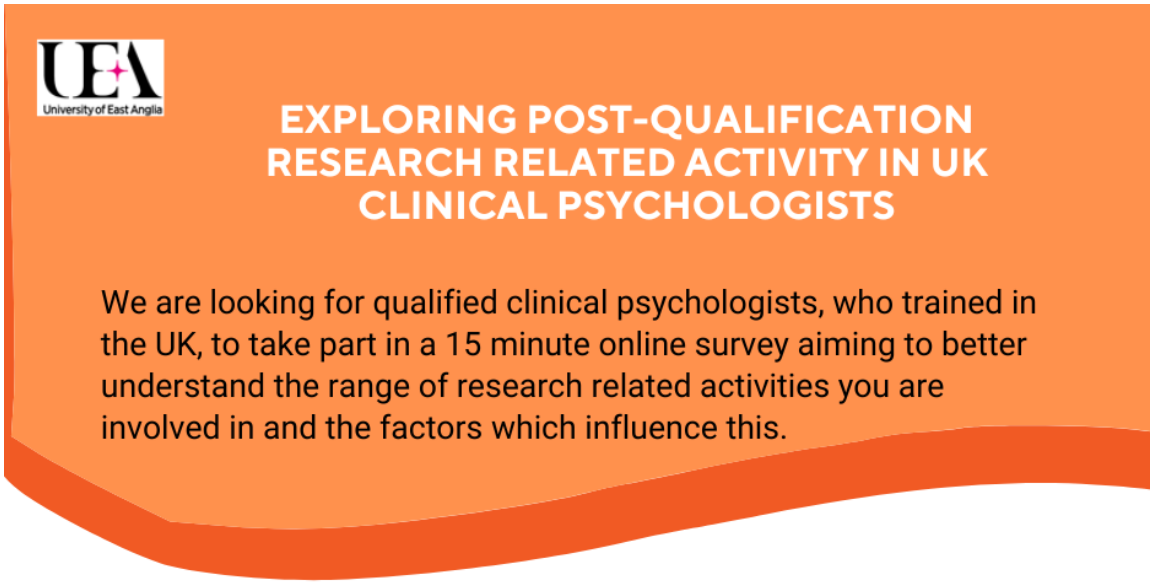
Appendix F: Recruitment Advertisements



If you would like to take part, you can do so at this link https://uea.onlinesurveys.ac.uk/exploring-post-qualification-research-related-activity-in-2s.

For further information, contact:
Stevie Burnett: stevie.burnett@uea.ac.uk
Dr Jo Hodgekins: J.Hodgekins@uea.ac.uk
Dr Sarah Reeve: sarah.reeve@uea.ac.uk

To thank you for your time, you can choose to be entered into a prize draw to win one of twenty £10 Amazon vouchers

University of East Anglia

EXPLORING POST-QUALIFICATION RESEARCH RELATED ACTIVITY IN UK CLINICAL PSYCHOLOGISTS

We are looking for qualified clinical psychologists, who trained in the UK, to take part in a 15 minute online survey aiming to better understand the range of research related activities you are involved in and the factors which influence this.

WHY ARE WE STUDYING THIS?

We know that research, and its application to practice, is an important part of clinical psychology.

To better understand the role of research in clinical psychology practice, we'd like to capture the breadth of activities you're involved in.

We'd also like to find out more about the factors which influence the kinds of research related activities you do.

WHAT WILL I BE ASKED TO DO?

You will complete an anonymous, online survey which will take approximately 15 minutes.

QUESTIONS?

You can contact the research team at:

Stevie Burnett: stevie.burnett@uea.ac.uk
Dr Jo Hodgekins: J.Hodgekins@uea.ac.uk
Dr Sarah Reeve: sarah.reeve@uea.ac.uk

HOW TO TAKE PART

If you would like to take part, you can do so at:
https://uea.onlinesurveys.ac.uk/exploring-post-qualification-research-related-activity-in-2

To thank you for your time, you can be entered into a prize draw for one of twenty £10 Amazon vouchers.

Appendix G: Survey text

Are you a qualified Clinical Psychologist holding a DClinPsy qualification (obtained in the UK) and working in the UK?
Yes No

Age
20-29 30-39 40-49 50-59
60-69 70-79 80+

Do you consider yourself to have a disability?
Yes No Prefer not to say

Are you the first generation of your family to go to university?
Yes No Prefer not to say

Gender
Cis-woman Cis-man Trans-woman
Trans-man Non-binary Other (please state)
Prefer not to say

Sexuality
Gay/Lesbian Asexual Bisexual
Pansexual Heterosexual Other (please state)
Prefer not to say

Ethnicity
Asian or Asian British
Indian Pakistani Bangladeshi Chinese Any other Asian background

Black, Black British, Caribbean or African
Caribbean African Any other Black, Black British, or Caribbean background

Mixed or multiple ethnic groups
White and Black Caribbean White and Black African White and Asian
Any other Mixed or multiple ethnic background

White
English, Welsh, Scottish, Northern Irish or BritishIrish Gypsy or Irish Traveller
Roma Any other White background

Other ethnic group
Arab Any other ethnic group

How many years ago did you qualify?-

Primary employer
NHS
University
Private company
Charity and third sector

Self employed
Local authority
Other (please state)

(if part time or employed in multiple roles please state FTE split in the box below)

Field of current role(s)
Adult Mental Health
Child and adolescent mental health
Older adults
Learning disability
Health Psychology
Forensic
Other (please state)

Geographic location in which you are employed
London; North East; North West; Yorkshire; East Midlands; West Midlands; South East; East of England; South West; Wales
North West Wales; North East Wales; Central Wales; South East; Swansea Bay; Pembrokeshire
The Southern Uplands; the Central Lowlands; The Highlands
Northern Ireland

Have you completed a PhD?
No
Yes

Did you publish your ClinPsyD Thesis?
Yes
No

Please score the below items based on your experiences when on your DClinPsy course
1 (disagree) 3 (neutral) 5 (agree)

1. Many of the course team did not seem to be very interested in doing research
2. The course team did what it could to make research requirements such as the thesis and dissertation as rewarding as possible
3. My advisor understood and accepted that any piece of research will have its methodological problems
4. I felt encouraged during my training to find and follow my own scholarly interests
5. Statistics courses were taught in a way that was insensitive to students' level of development as researchers
6. The statistics courses we took did a good job, in general, of showing students how statistics are actually used in psychological research
7. There was a sense that being on a research team could be fun, as well as intellectually stimulating
8. The course team on my program used an extremely narrow range of research methodologies
9. Generally, students in my training program did not seem to have intellectually stimulating and interpersonally rewarding relationships with their research advisors
10. It was unusual for first-year students on my program to collaborate with advanced students or faculty on research projects

11. I had the feeling, based on my training, that my thesis (or dissertation) needed to be completely original and revolutionary for it to be acceptable to the faculty
12. The course team seemed interested in understanding and teaching how research can be related to clinical practice
13. Most members of the course team did not seem to really care if students were genuinely interested in research
14. During our course work, students were taught a wide range of research methodologies, e.g., field, laboratory, survey approaches
15. Students in our program felt that their personal research ideas were squashed during the process of collaborating with faculty members so that the finished project no longer resembled the student's original idea
16. Students seemed to get involved in thinking about research from the moment they enter the program
17. Students in the program were rarely taught to use research findings to inform their work with clients
18. The course team of my DClinPsy program show excitement about research and scholarly activities.

Over the past year, have you been involved in the following types of research related activity?

1. Used routine outcome measures e.g. PHQ-9, GAD-7
2. Gathered descriptive data e.g. Millon clinical multiaxial inventory
3. Read a research paper e.g. research articles, literature reviews
4. Used research to influence and inform your own clinical practice
5. Used research to influence and inform the practice of others. e.g. through training and supervision
6. Disseminated research/evidence base relevant to clinical psychology e.g. through presenting reports and findings
7. Conducted a clinical audit
8. Conducted a service evaluation/improvement project
9. Writing or editing book chapters
10. Supervised a research or service evaluation project
11. Acted as part of a research team on a funded study
12. Acted as a reviewer for peer reviewed research
13. Written a research grant or proposal
14. Designed a study
15. Analysed data as part of a study
16. Collected data for use in research
17. Written up a study
18. Submitted or published research of a quality to satisfy peer review

Please rate the below statements as to which applies most to your current beliefs:
1 (strongly disagree) 3 (neutral) 5 (strongly agree).

1. Involvement in research will enhance my job/career opportunities
2. People I respect will approve of my involvement in research
3. Involvement in research will allow me to contribute to practitioners' knowledge base
4. Research involvement will lead to a sense of satisfaction
5. Being involved in research will contribute to my development as a professional
6. I believe research skills will be fruitful for my career
7. My involvement in research will lead to meaningful contributions to the field

8. My analytical skills will become more developed if I am involved in research activities

The following items are tasks related to research. Please indicate your degree of confidence in your ability to successfully accomplish each of the following tasks on a scale of 0 – 9 with 0 representing no confidence and 9 representing total confidence.

1 2 3 4 5 6 7 8 9
No Confidence Total Confidence

1. Keeping records during a research project
2. Designing an experiment using traditional methods (e.g., experimental, quasi-experimental designs)
3. Writing the introduction and literature review for a dissertation
4. Writing the introduction and discussion sections for a research paper for publication
5. Formulating hypotheses
6. Writing the method and results sections of a thesis
7. Utilizing resources for needed help
8. Understanding computer printouts
9. Defending a thesis or dissertation
10. Using multivariate statistics (e.g., multiple regression, factor analysis, etc.)
11. Using statistical packages (e.g., SPSS-X, SAS, etc.)
12. Operationalizing variables of interest

I have adequate resources available to conduct research (*e.g. internal funds available, paid hours devoted to research, a research assistant, admin assistance, journal access, lab space*)

(1 = none, 2 = some but inadequate, 3 = adequate, 4 = more than adequate)

Please rate the following from 1 (strongly disagree) 3 (neutral) 5 (strongly agree).

1. My superiors are supportive of my involvement in research related activities
2. My peers are supportive of my involvement in research related activities
3. I have adequate access to research networks and mentors for support

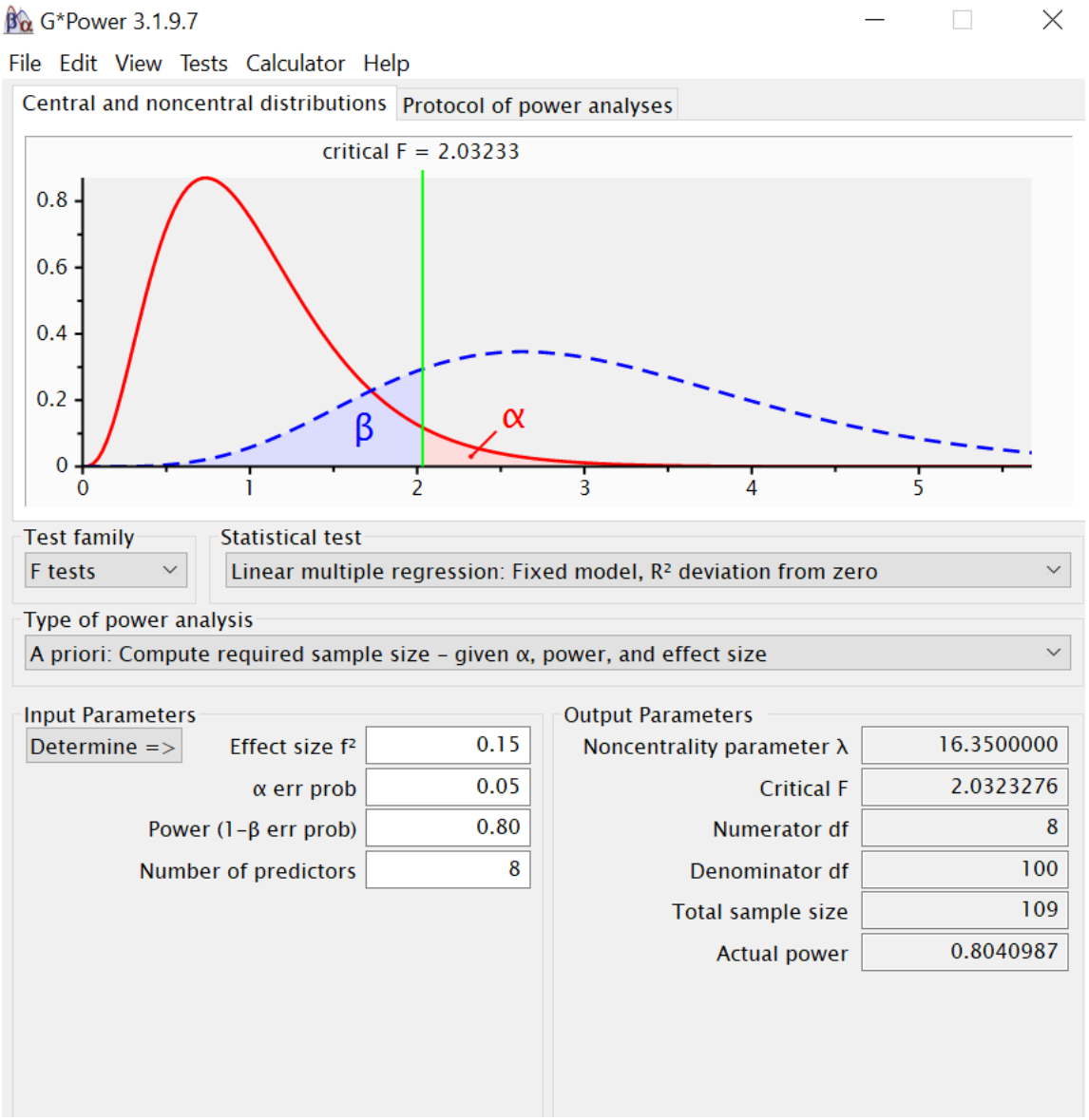
Please rate the below statements on the following scale: 1 (strongly disagree) to 5 (strongly agree)

1. I believe I should rely on research literature as a guide to clinical practice
2. I enjoy doing research
3. I would like to be doing more research than I am currently doing

Barriers and facilitators

1. What would facilitate you carrying out more research related activity over the next year?
2. What would stop you from carrying out more research related activity over the next year?

Appendix H: G*Power output



Appendix I: UEA FMH ethical approval

University of East Anglia
Norwich Research Park
Norwich. NR4 7TJ

Email: ethicsapproval@uea.ac.uk
Web: www.uea.ac.uk

Study title: Exploring post-qualification research related activity in UK clinical psychologists

Application ID: ETH2223-0098

Dear Stevie,

Your application was considered on 17th January 2023 by the FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee).

The decision is: **approved**.

You are therefore able to start your project subject to any other necessary approvals being given.

If your study involves NHS staff and facilities, you will require Health Research Authority (HRA) governance approval before you can start this project (even though you did not require NHS-REC ethics approval). Please consult the HRA webpage about the application required, which is submitted through the IRAS system.

This approval will expire on **27th September 2024**.

Please note that your project is granted ethics approval only for the length of time identified above. Any extension to a project must obtain ethics approval by the FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee) before continuing.

It is a requirement of this ethics approval that you should report any adverse events which occur during your project to the FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee) as soon as possible. An adverse event is one which was not anticipated in the research design, and which could potentially cause risk or harm to the participants or the researcher, or which reveals potential risks in the treatment under evaluation. For research involving animals, it may be the unintended death of an animal after trapping or carrying out a procedure.

Any amendments to your submitted project in terms of design, sample, data collection, focus etc. should be notified to the FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee) in advance to ensure ethical compliance. If the amendments are substantial a new application may be required.

Approval by the FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee) should not be taken as evidence that your study is compliant with the UK General Data Protection Regulation (UK GDPR) and the Data Protection Act 2018. If you need guidance on how to make your study UK GDPR compliant, please contact the UEA Data Protection Officer (dataprotection@uea.ac.uk).

Please can you send your report once your project is completed to the FMH S-REC (fmh.ethics@uea.ac.uk).

I would like to wish you every success with your project.

On behalf of the FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee)

Yours sincerely,

Dr Paul Linsley