Martin Parsons BA(Hons), MSc

FACTORS AFFECTING THE RESEARCH ACTIVITY OF UK CLINICAL PSYCHOLOGISTS

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Declaration

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Summary

Part A provides an overview of the literature pertaining to influences on the research activity of clinical psychologists. The need for ongoing research within the profession is outlined and the evidence for the role of different factors associated with research activity is described and evaluated. Further investigation is recommended in the areas of the research training environment and the practice context.

Part B reports an empirical study looking at how components of the theory of planned behaviour may mediate the impact of factors within the research training environment on research intention in a sample of UK clinical psychologists. Qualitative analysis was also carried out on comments describing influences of research activity. Results suggested that a two factor solution best fit the RTE and further analysis showed the predictive power of these factors for research intention to be fully and partially mediated by the theory of planned behaviour variables. Qualitative data suggested influences within the practice context to be important and a model integrating the results is proposed.

Part C is a critical appraisal of the project, which considers learning points and skills gained from the process of undertaking the study. Future directions for developing research skills are discussed and personal reflections on how the implications of the project may be incorporated into future roles are provided.

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Section A: Literature Review Paper

A Literature Review of the Evidence for Influences on Research Activity among Clinical and Counselling Psychologists

Word Count: 5458

SALOMONS
CANTERBURY CHRIST CHURCH UNIVERSITY

Abstract

Research is vital to the role of clinical psychology in advancing the profession's understanding of clinical phenomena and developing new and effective methods for intervention. The scientist-practitioner model supposedly adopted by the profession suggests that practising clinical psychologists should also be engaged in complimentary research. However, low levels of research activity among clinical psychologists have frequently been reported in the literature. Relatively little is known about what affects research activity, with the majority of investigation being conducted in the US and focussing on the impact of the Research Training Environment (RTE). This review explores and evaluates the evidence for the RTE and other factors related to research activity in detail. Gaps for future research are identified, including a greater understanding of the ingredients of the RTE and more investigation into the practice context.

Introduction

Despite the advanced level of research training that clinical psychologists receive, reports have repeatedly shown low levels of research activity among qualified clinical psychologists (Davey, 2002; Norcross, Karpiak & Santoro, 2005); the modal number of journal publications by clinical psychologists being reported as zero (Barrom, Shadish & Montgomery, 1988; Norcross et al., 2005) Thomas, Turpin and Meyer (2002) have noted that the transition to doctoral training in the UK has paradoxically coincided with a decline in clinical psychology research. This article shall examine the literature on factors influencing research activity among psychologists and suggest new directions for future investigation. In particular, the areas of the research training environment, personality, research self efficacy and mentoring shall be considered.

What is research and why is it important?

Research, as noted by Dallos and Vetere (2005) is often defined as an "approach to rigorous and systematic investigation that employs the process of hypothesis testing" (p11). This is extended by the Department of Health (DH), which recognises research as "the attempt to derive generalisable new knowledge by addressing clearly defined questions with systematic and rigorous methods" (p3, 2005). Such descriptions typically equate research to the positivist philosophy of the physical sciences and the concept of an objective, observable truth that can be known and measured using quantitative methodologies. Constructionist approaches, however, tend to suggest that there is no objective truth (or that it is extremely difficult to know), instead striving to understand the subjective experience of individuals and societies, through which meaning is constructed, using qualitative methodologies (Burr, 2003). Though constructionist approaches are now widely accepted within the scientific

community, positivist approaches still dominate healthcare and the evidence they generate is usually considered more valid (Evans, 2003).

Within the empirical literature, inconsistencies also exist over what constitutes "research activity". This term is used interchangeably to cover a wide array of activity, including dissertation research, published empirical and theoretical papers, and clinical audit. These inconsistencies shall be addressed as they arise in the review.

The importance of clinical research is highlighted by the British Psychological Society (BPS, 2005) as essential in advancing the knowledge-base and treatments in mental health, which are implemented via national service frameworks and clinical guidelines published by the National Institute for Clinical Effectiveness (NICE). Cooper and Turpin (2007) extend this by adding that clinical psychology research is needed to prevent practice guidelines from becoming dominated by medical approaches. Clinical psychologists receive advanced doctoral level training in research, making them one of the best equipped professionals in the NHS to conduct research (DH, 2004). This is reflected in policy documents surrounding clinical psychologists' roles within the NHS, including Agenda for Change job descriptions (BPS, 2004), New Ways of Working (BPS, 2007), the Manpower Planning Advisory Group report (1990) and the Management Service Advisory report (1989). The addition of the doctoral research component to clinical psychology training reflected a move towards the "scientist-practitioner" model of working (Long & Hollin, 1997), and suggests that research would be common-place among clinical psychologists, yet this is not the case.

The current economic and political climate also presents a concern in terms of resources being made available for increased research activity. Despite government rhetoric about the

value of evidence-based health-care (DH, 1997, 2001) when it competes directly with patient care, research seems unlikely to rank highly in the service requirements of general practitioners. With the advent of GP-based commissioning (DH, 2010), research may potentially be pushed further down the list, divorcing it from the NHS and practice. Therefore, it is important to examine the factors that may promote or inhibit research activity to find ways to better enable clinical psychologists to continue fulfilling this arguably vital role.

What influences research activity?

There have been many investigations into factors thought to promote or hinder research activity. Several studies have looked at gender, finding that men routinely publish more than women (Over, 1982; Xie & Shauman, 1998). Others have considered the impact of role models (Dent & Ormiston, 1979) and systemic, organisational factors (Cooper & Turpin, 2007). This review shall consider the extant literature pertaining to influences of research activity to provide an overview of the findings thus far (see appendix 1 for details of literature search).

The Review

Research Training Environment.

Perhaps the most developed line of enquiry is the concept of the research training environment (RTE), first conceived by Gelso (1979, 1993) in the US. He suggested that students enter counselling psychology training with "great excitement about becoming psychological practitioners, but.... a deep sense of ambivalence about the interest value and the usefulness of research" (p26, 1979), which was neither acknowledged nor addressed by training programmes. Gelso suggested that courses needed to do more to promote positive

attitudes towards research, and proposed ten "ingredients" of through which this might occur, including:

1. Faculty modelling appropriate scientific behaviour (faculty modelling).
2. Positive reinforcement of scientific activity (positive reinforcement)
3. Early, non-threatening involvement in research (early involvement).
4. Separating out research from statistics (separating statistics).
5. Teaching students to look inwards for research ideas (looking inward).
6. Teaching science as a social experience (research as social).
7. Teaching that all research is flawed (flawed research).
8. Teaching varied investigative styles (varied styles).
9. Wedding of research and clinical practice (research-practice links).
10. Focusing on how research is conducted in the workplace.

Terms in brackets shall be used hence-fourth to refer to these components. These ingredients are on the whole self-explanatory, but a description of each is provided in appendix 2. It should be noted that these components were derived from Gelso's own personal observations and experience alone and he noted that they were not "scientifically verified principles" (p28, 1979).

Gelso's theory sparked much interest in the US. Galassi, Brooks, Stoltz and Trexler (1986) surveyed the directors of thirty-eight counselling psychology training programmes with a questionnaire regarding aspects of research training and research productivity during the previous year. Research productivity was defined as the number of research papers presented or published by students. They found that programmes with higher productivity tended to

involve students in research earlier on in training, required them to participate in student-faculty research teams, complete research apprenticeships and provided more informal and administrative support for research. High productivity programmes also placed a greater emphasis on the philosophy of science behind research and provided more exposure to qualitative techniques. They concluded that programmes routinely requiring, supporting and encouraging hands-on research appeared to increase research productivity.

This study provides some support for the early involvement and varied styles components of the RTE. However, it is limited by its one-year time-frame and the choice of statistical analyses. Multiple t-tests and chi-square tests were conducted without Bonferroni corrections, increasing the possibility of a type I error. An Analysis of Variance would have been more robust.

Royalty, Gelso, Mallinckrodt and Garrett (1986) put Gelso's (1979) theory to the test by looking at whether the RTE did, as Gelso hypothesised, impact on attitudes towards research. They surveyed 358 students from ten counselling psychology programmes in the US, using the Research Training Environment Scale (RTES), which they created for their study. This was a forty-five item inventory measuring nine of the ten RTE components; component ten regarding research in the workplace was omitted because the authors felt that students in earlier stages of training could not have enough experience to validly rate this item. Attitudes were assessed via four questions for two time-points, once regarding retrospective attitudes at the start of training, and once regarding current feelings.

Royalty et al. found no difference in retrospective attitudes between programmes and mean ratings were effectively neutral, supporting Gelso's (1979) notion of ambivalence at the start

of training. There was a small but significant difference between retrospective and current attitudes in the positive direction, and a significant difference between programmes on current attitudes. When the two programmes with the greatest attitude-change were compared with the remaining eight, a significant difference emerged on the RTES total score and the subscales relating to faculty modelling, positive reinforcement, early involvement, flawed research and research-practice links. No other components exhibited differences, save for looking inward, where an inverse relationship existed.

This study was the first to pilot a measure of the RTE, though some of the items had less than optimal reliability and stability. There was also no validity data on the RTES and it was still essentially measuring students' perceptions of the environment, not the environment itself (if such a thing can be measured). Royalty et al. also used retrospective attitudes for the start of training, and the representativeness of these is questionable. Their justification for omitting component ten (conducting research in the workplace) due to students lacking experience seems inconsistent since it could be argued that participants should have experienced the entirety of training before being able to rate any aspect of it validly. The majority of participants here were in the early stages of training, making this last point more of a concern.

This raises the question of whether students in the RTE are the best participants to use, rather than say graduates who have completed training and are in employment. Mallinckrodt (1997) asserts that assessing productivity may be premature with student participants since they are still experiencing the RTE, and the real test is some time after training when the support of the environment has gone. A longitudinal approach following students into employment would be ideal.

Personality.

Mallinckrodt, Gelso & Royalty (1990) used the same data as Royalty et al. (1986) to investigate how students' personality type may interact with the RTE to impact on research attitudes. They measured "Holland personality type", using the Vocational Preference Inventory (VPI, Holland, 1978), which consists of subscales measuring six personality types. Of interest to this study were the types; investigative, artistic and social. Scores on the other types were too low to include.

They found that participants with investigative and investigative-artistic personality types held more positive research attitudes, both at programme-entry and currently, than those with other personality types. Participants from the two programmes with the highest attitude change had significantly stronger investigative personalities than other programmes. Positive attitude-change was also associated with the RTE components of flawed research, and research-practice links. In a series of hierarchical regressions they found that 34% of the variance in current attitudes was accounted for by initial attitudes, 4% was attributable to the RTE and 10% was accounted for by Holland personality type, suggesting a greater role for personality compared to the RTE.

Krebs, Smither and Hurley (1991) also considered personality, but like Galassi et al. (1986), looked at research productivity, operationalising this as the self-reported number of published research and theoretical journal articles. Number of publications per year was used as the dependent variable. Participants were 260 counselling psychologists who had graduated from 1970 onwards. They found similarly high scores for investigative, artistic and social personality types as Mallinckrodt et al. (1990) and low levels of publication (mean 1.29) with 59% not publishing anything.

A positive correlation between investigative personality and productivity, and a negative correlation between social personality and productivity were found. The RTE components faculty modelling, early involvement, research as social, flawed research and research-practice links also correlated with productivity. The RTE and investigative personality type each explained a significant and unique amount of variance in productivity (RTE = 4%, Investigative = 2%), as did the interaction between the two (1.8%).

This study was the first to use participants who had completed training (i.e. experienced the entire RTE) and to look at productivity post-training, finding the RTE to account for the same amount of variance in productivity as Mallinckrodt et al. (1990) found with attitudes, but showing personality to have a much reduced role. This study is limited however, by its use of retrospective RTE ratings.

Mallinckrodt and Gelso (2002) conducted a fifteen-year follow-up study using Royalty et al's. (1986) original data and looking at the number of publications (productivity) for the whole sample since the original study was conducted. Similarly to Kreb's et al. (1991), half the sample had no publications. Investigative personality, along with faculty modelling, research as social and separating statistics correlated significantly but weakly with productivity. Hierarchical regressions suggested that entry-point attitudes accounted for 2% of productivity, the RTE accounted for 7% and personality type 3%.

The authors also compared programmes on productivity and found that both moderately and highly productive programmes contained more students high on artistic and social interests, but participants high on investigative interests were only found in the moderately productive

programmes, not the highly productive ones. This seems to contradict the findings of Royalty et al. (1986) and Malinckrodt et al. (1990). The most productive programmes had significantly higher ratings on the RTE components; faculty modelling, positive reinforcement and flawed research, compared to the least productive programmes, and higher scores on looking inward, separating statistics and teaching varied styles compared to moderately productive programmes.

This study is of high value due to its longitudinal design allowing examination of the impact of the RTE as perceived whilst still in training (rather than retrospectively) on long-term productivity. It further supports Krebs et al's. (1991) finding of the reduced role of the investigative personality, with the authors concluding that personality may be much less of a predictive factor for long-term productivity, and suggesting that situational variables such as family and job setting may be more significant. This fits with the findings of Tinsley, Tinsley, Boone and Shinn-Li (1993) who failed to find a relationship between personality and scientific interests when also using a prospective design. Mallinckrodt and Gelso's study was limited slightly by their method. They only used one literature database and the original list of participant names, some of which would have changed, e.g. due to marriage. They also note that the RTES may not comprehensively assess all possible factors in the RTE.

Kahn and Gelso (1997) explored the structure of the RTE via exploratory and confirmatory factor analyses using a revised edition of the RTES (RTES-R, Gelso, Mallinckrodt & Judge, 1996) and data from Gelso et al. (1996) and Kahn and Scott (1997) (see below for reviews).

To maintain statistical power in the factor analysis, they used the nine subscale scores of the RTES-R rather than item scores because their sample was too small. They discovered that a

higher order two-factor solution had the best fit and termed the factors "interpersonal" and "instructional". Table 1 below shows how the nine components loaded onto these factors.

Table 1

Subscale Grouped by Factor.

Interpersonal Factor	**Instructional Factor**
Faculty Modelling	Flawed Research
Positive Reinforcement	Looking Inward
Early Involvement	Separating Statistics
Research as Social	Varied Styles
	Research-Practice Links

The authors described the interpersonal factor as the product of research-based interactions and experiences, often between faculty and students, whereas the instructional factor is described as the sum result of didactic exchanges. Kahn & Gelso's study provides a new lens through which to view the RTE enhancing the model, though as of yet, it has not been replicated. Their use of subscales instead of items though, leaves open the question of whether a different solution may have emerged if a bigger sample were used with item scores.

Research Self-Efficacy.

Bandura's (1977) well-known theory of self-efficacy suggests that people are more likely to engage in a behaviour if they believe that they have the ability to successfully complete that behaviour. Research self-efficacy then refers to "one's confidence in being able to successfully complete various aspects of the research process" (Kahn & Scott, 1997, p41). Betz (1986) employed Bandura's theory to map determinants of self-efficacy (bar emotional response) onto RTE components as follows, suggesting that self-efficacy would be most influenced by these RTE components.

Self Efficacy		RTE
- Previous experience	→	Early involvement
- Modelling, vicarious learning	→	Faculty modelling
- Verbal persuasion & encouragement	→	Positive reinforcement
- Emotional response	→	Does not map

Phillips and Russell (1994) examined the role of self-efficacy in 125 graduate counselling psychology students, using the original RTES and a measure of self-efficacy developed for their study, called the Self-Efficacy in Research Measure (SERM). This was a 33-item Likert response scale, asking about confidence in performing a number of research activities. Productivity was measured by assigning points to specific research activities, e.g. 1 point for dissertation in progress, presenting a paper at a conference, etc; 2 points for completing a dissertation, for each article published and so on.

They found positive, significant correlations between the RTE and self-efficacy and self-efficacy and productivity but not the RTE and productivity. Self-efficacy was predictive of productivity but the RTE was not. Students in more advanced years of training reported significantly higher levels of self-efficacy and productivity than early stage students.

This study suggests that the RTE has an indirect effect on productivity via self-efficacy. The finding that the RTE was not predictive of productivity differs from previous studies, however, this may be due to the choice of measure of productivity and the sample. The authors' method for assigning "productivity points" automatically gave more points to students in later stages of training and their sample comprised students, many of whom will

not have experienced the entire RTE. It is therefore very difficult to say whether productivity and RTE ratings are reflective of these variables or are simply artefacts of stage in training. Separate RTE components were also not examined, despite Betz's (1986) suggestions.

Gelso, Mallinckrodt and Judge (1996) conducted a study in which they piloted the RTES-R mentioned above, with 173 applied psychology students. Simultaneously, they also looked at the relationships between the RTE, self-efficacy (using the SERM), interest in research roles vs. practitioner roles (using the Scientist Practitioner Inventory, Leong & Zachar, 1991) and attitudes (using Royalty et al's. (1986) method).

The new RTES-R had much improved reliability and internal consistency, and all subscales of the new measure correlated significantly with self-efficacy and attitude-change scores, but not practitioner-role-interests. Surprisingly, only two RTE components (looking inward and flawed research) correlated with scientist-role-interests.

As with previous studies, programmes with the highest change in attitudes had significantly higher RTES-R scores than low attitude-change programmes, but this time on all components. The authors suggest that the RTE be viewed as a determinant of self-efficacy and attitudes, rather than self-efficacy and attitudes determining perceptions of the RTE.

Whilst this study is useful in providing a more robust measure of the RTE, the author's analyses were quite limited in that they did not conduct any regressions to examine the predictive power of the independent variables as others have done, leaving uncertainty over the relationship between self-efficacy and attitudes.

In contrast, Kahn and Scott (1997) built on the existing work and proposed a model in which the direct effects of the RTE and personality on productivity are mediated by research attitudes and self-efficacy.

Their sample comprised 267 counselling psychology students and productivity was assessed using a twelve-item measure regarding current and past research involvement, e.g. "how many articles have you submitted to refereed journals?". Using structural equation modelling, they found that self-efficacy was predicted by the RTE alone and attitudes were predicted by investigative personality type, the RTE and self-efficacy. Productivity was then predicted by attitudes but not self-efficacy. This finding conflicts with Phillips and Russell (1994), who found self-efficacy to mediate the RTE-productivity relationship. Kahn and Scott provide a valuable contribution, considering all the key variables in one study and suggesting a pivotal role for attitudes.

Social Cognitive Career Theory.

Lent, Brown and Hackett (1994) developed a conceptual framework using social cognitive theory (Bandura, 1986), which explained how people formed their academic and career interests and performed in each of these arenas (social cognitive career theory). This proposed that career interests are the resultant interaction between self-efficacy beliefs and expectations about the outcome of the behaviour (e.g. a perceived reward). Self-efficacy and outcome expectations are themselves derived from a mix of environmental and personality factors and outcome expectations are in part influenced by self-efficacy.

Bishop and Bieschke (1998) applied Lent et al's. (1994) theory to research interests, suggesting that the effects of personality and the RTE on interests are mediated by self-

efficacy and outcome expectations (which are similar to attitudes). Using 184 students and path analysis via three hierarchical regressions, they found that self-efficacy was significantly predicted by investigative personality, the RTE and year in programme. Outcome expectations were predicted by investigative personality, the RTE and self-efficacy. Research interests were negatively predicted by artistic interests, and positively predicted by investigative interests, self-efficacy and outcome expectations. This study showed good support for social cognitive career theory and the role of self-efficacy as a mediator, reflecting Phillips and Russell's (1994) findings, but disputing Kahn and Scotts (1997). It would have been interesting if they had considered the role of separate RTE components in their analysis, though this would have had power implications.

Mentoring.

Hollingsworth and Fassinger (2002) considered the impact of mentoring on productivity, which has been well documented in other fields, e.g. business (Turban & Dougherty, 1994). They administered a shortened version of the RTES-R to 194 counselling psychology students. This was a 27-item measure developed by conducting a factor analysis of each RTES-R subscale and retaining the highest loading three items from each. Items relating to mentoring were further removed to avoid overlap with the mentoring measure. This was the Research Mentoring Experiences Scale, which was adapted from use in business settings. They also used the SERM, Royalty et al's. (1986) measure of attitudes and Kahn and Scott's (1997) productivity questions.

Mentoring and self-efficacy were found to significantly mediate the relationship between the RTE and productivity. Past attitude was the strongest predictor of productivity, and

explained 10% of its variance when entered into a hierarchical regression with mentoring and self efficacy, which were also significant predictors.

This study adds yet more weight to the possible mediating role of self-efficacy and the authors suggest that mentoring may be the vehicle through which the RTE has the greatest impact. It would have been interesting if the authors had explored the specific roles of the RTE components, or perhaps the two factors reported by Kahn and Gelso (1997). They also only reported the percentage of variance in productivity predicted by attitudes and not the other variables.

Kahn and Schlosser (2010) turned the approach so far on its head and instead of looking at predictors of research activity, they examined predictors of the RTE, both between and within different programmes, students and faculty members. Variables included the SERM, interest in research (Bishop & Bieschke, 1998), Kahn and Scott's (1997) productivity measure, and the advisory working alliance inventory, which measured strength of students-faculty alliance. Forty psychology programmes from the US and Canada were included, (23 clinical, 8 counselling and 9 school psychology) which resulted in 197 students and 81 faculty members.

Student RTE ratings correlated with the advisory alliance, self-efficacy and research interest. Productivity did not correlate with the RTE, but did correlate with self-efficacy, research interest and the advisory alliance, supporting Hollingsworth and Fassinger's (2002) above findings of similar mediating relationships. Programme-level RTE ratings showed the same pattern of correlations. Faculty-student RTE ratings correlated and faculty ratings of the alliance also correlated with faculty RTE ratings and faculty productivity.

Twenty-six percent of the variance in programme RTE was explained by research interest whilst an impressive 81% was explained by the student ratings of the advisory alliance. Self-efficacy and productivity did not explain a significant amount of variance at this level, supporting Gelso et al's. (1996) assertions that these variables are predicted by the RTE, not the other way around. Similarly to Hollingsworth and Fassinger (2002), the authors suggest that advisors may be the primary vehicle through which the RTE is transmitted, as Gelso, (1979) originally implied.

Hollingsworth and Fassinger's (2002) and Kahn and Schlosser's (2010) studies suggest the important effect of positive student-faculty relationships, but also raise some interesting questions over how this factor should be conceptualised. In his creation of the RTE, Gelso (1979, 1993) clearly placed responsibility for establishment of the necessary ingredients within the domain of the faculty, suggesting, as the above two studies have found, the inherent role of positive faculty-student relationships in transmitting the RTE. However, if these relationships have such a key role, then shouldn't they be captured within the RTE, not in addition to it? Hill (1997) and Betz (1997) have suggested that the RTE does not fully grasp this aspect of training, but Hollingsworth and Fassinger's (2002) removal of items from the RTES-R to avoid overlap with their mentoring measure implies that maybe it does to some extent. This point illustrates a need to re-examine the components of the RTE.

Theory of Planned Behaviour

More recent investigation into research activity has begun to incorporate the theory of planned behaviour (TPB, Ajzen, 1991) in an attempt to draw the various different findings into a single theoretical model. Ajzen proposed that three types of beliefs influence the

formation of behavioural intention, which itself is strongly related to actual behaviour. These beliefs are:

1. Behavioural beliefs – about the consequences of a given behaviour and the probability of different outcomes.

2. Normative beliefs – about how others and society would judge the behaviour, whether it would be condoned or condemned and how important this is to the individual.

3. Control beliefs – about one's ability to perform the behaviour and perceptions of factors that may facilitate or impede performance.

TPB has successfully been used to predict a multitude of actual behaviours in a variety of settings (e.g. Lavin & Groarke, 2005; McMillan & Conner, 2003) and in many cases behavioural intention rather than actual behaviour is used as an outcome measure, particularly where it is difficult/unethical to measure actual behaviour. This practice is supported by the substantial body of evidence that behavioural intention is strongly related to actual behaviour (Cooke & Sheeran, 2004).

Holttum and Goble (2006) applied TPB to research activity, and created a theoretical model (figure 1) incorporating the extant empirical and theoretical literature already discussed. They noted the considerable overlap between behavioural beliefs and measures of attitudes and outcome expectations in the literature, so combined these variables into the mediator attitudes (Royalty et al. 1986; Kahn & Scott, 1997; Bishop & Bieschke, 1998). Holttum and Goble also highlighted similarities between control beliefs and self-efficacy as a mediating

variable (Phillips & Russell, 1994; Hollingsworth & Fassinger, 2002), and some qualitative evidence has suggested that the subjective norms of psychologists also have an impact on research activity (Corrie & Callanan, 2001). These TPB components are hypothesised to mediate the relationship between the RTE and research intention/activity.

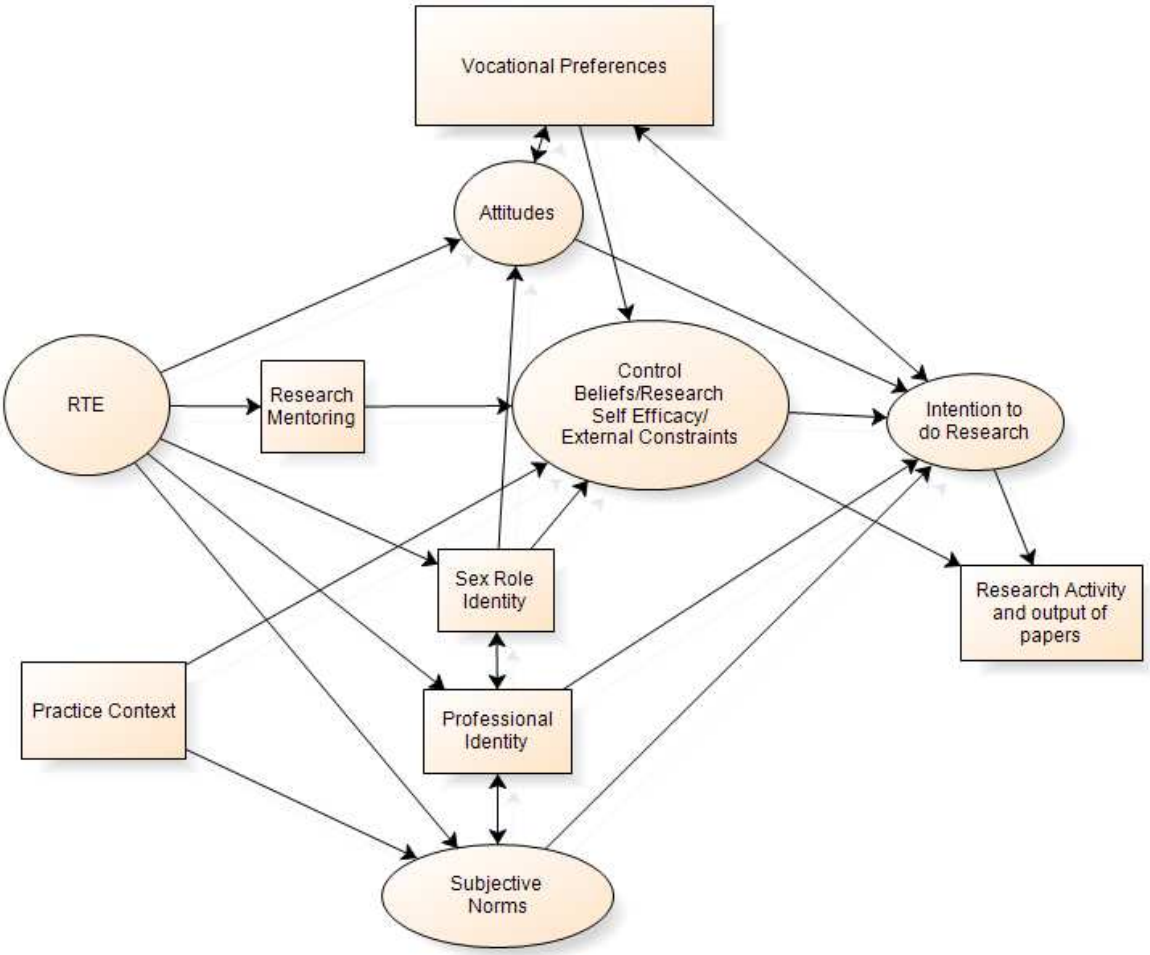

Figure 1. Holttum & Goble's (2006) Theoretical Model.

Part of this model was tested empirically by Eke, Holttum and Hayward (in submission). In a sample of 374 qualified UK clinical psychologists they demonstrated that the relationship between the RTE and research intention was mediated by the TPB components. Self-

efficacy was also predicted by the RTE, but did not mediate its effects on intentions. In a final regression the TPB variables came out as the only significant predictors of intentions, the strongest being attitudes, showing strong support for Holttum and Goble's model.

Whilst Eke et al's. (in submission) study is a valuable contribution to the topic, it is worth considering the representativeness of intention to do research as an indicator of actual research activity. Cooke and Sheeran (2004) conducted a meta-analysis of TBP studies and found a strong relationship between intention and behaviour. However, most of the included studies looked at somewhat concrete, health-related behaviours such as eating, exercise and contraception use. This is in contrast to research activity, which is perhaps a more complex behaviour involving multiple steps and a series of decisions often affected by forces beyond the control of the individual. Though there is little evidence to suggest it, the possibility remains that intending to do research may not be indicative of actually doing it.

Conclusion

Summary

Appendix 3 provides a table summarising the above findings. Research pertaining to possible factors that influence research activity among applied psychologists has tended to focus on the influence of the RTE. There is evidence to support the direct impact of the RTE on productivity (Galassi et al., 1986; Krebs et al., 1990; Mallinckrodt & Gelso, 2002) and on research interests/attitudes (Royalty et al., 1986; Mallinckrodt et al., 1990; Gelso Mallinckrodt & Judge, 1996), as well as the indirect effect of the RTE via outcome expectations (Bishop & Bieschke, 1998, Eke et al., in submission; Deemer et al., 2009), the mentoring relationship (Hollingsworth & Fassinger, 2002; Kahn & Schlosser, 2010) and self-efficacy (Phillips & Russell, 1994; Bishop & Bieschke, 1998; Hollingsworth & Fassinger,

2002). There is some question over the role of self efficacy, however, with some studies failing to find a mediating effect (Kahn & Scott, 1997; Eke et al.). Personality and specifically investigative interest has also been found to play a role in both research attitudes (Mallinckrodt et al., 1990; Bishop & Bieschke, 1998) and productivity (Krebs et al., 1990; Kahn & Scott, 1997; Mallinckrodt & Gelso, 2002). The interactions between all these variables is less clear still, as is the extent to which they can explain research activity/attitudes, both separately and together, particularly when some studies found the RTE to have a direct effect, whilst others found it to be mediated.

The RTE itself is comprised of ten components, nine of which have routinely been assessed within the literature, however as Betz (1997) has noted, the majority of studies have tended to look at the overall score rather than the role of specific components or factors, despite this information seeming crucial for the development of training programmes. Of the five studies that looked at the separate components, three each found faculty modelling (Royalty et al., 1986; Krebs et al., 1990; Mallinckrodt & Gelso, 2002), flawed research (Royalty et al., 1986; Mallinckrodt et al., 1990; Krebs et al., 1990) and research-practice links (Royalty et al., 1986; Mallinckrodt et al., 1990; Krebs et al., 1990) to have the strongest impact on productivity or attitudes. Two studies each found early involvement (Royalty et al., 1986; Krebs et al., 1990) and research as social (Krebs et al., 1990; Mallinckrodt & Gelso, 2002) to play important roles, whilst one study each found positive reinforcement (Royalty et al., 1986) and separating statistics (Mallinckrodt & Gelso, 2002) to have an effect. No studies found looking inwards or varied styles to have a significant effect, except for Gelso et al. (1996) who found all components to have an effect on research attitudes whilst piloting the RTES-R. No studies have looked at the effect of the interpersonal and instructional factors identified by Kahn & Gelso (1997), nor attempted to replicate their factor analysis.

As noted earlier, the RTE was constructed primarily from Gelso's (1979) speculations about what may be important components of research training, and measured using quantitative assessments of students' perceptions of those components. There is no research attempting to corroborate this structure with psychologists who have completed training to see if it fits with their experience, or if in fact other components may be of importance. The dominance of the RTE also seems to have eclipsed investigation into factors beyond training that may affect research activity. This point is made by Hill (1997), who suggests that aspects such as the need for achievement; balancing personal and private lives; chance; and avoidance of stress may be important. Qualitative investigation similar to Corrie and Callanan's (2001) would seem to be essential in further understanding facilitators and barriers to research in the workplace.

Virtually all studies were conducted in the US using students still in training. Only three studies used samples of qualified psychologists, of which Mallinckrodt and Gelso (2002) provide a valuable piece of longitudinal research, suggesting that the RTE (assessed whilst in training) accounts for approximately 7% of the variance in productivity, fifteen years later. Further longitudinal studies looking at other variables beyond the RTE and using qualified samples in the UK would be highly desirable.

There is wide variation in how research activity is operationalised, with most studies attempting a measure of published journal articles. Despite this being an easily accessible measure and an indicator of research competency (Quality Assurance Agency for Higher Education, 2008), it is perhaps a somewhat crude marker of research activity, since it excludes many examples of research skills used in practice, including service evaluations,

audits, critiquing of literature to identify relevant treatments, supervision of research projects, internal research projects and unpublished research. Published articles are also affected by the politics surrounding what does and does not reach publication stage, e.g. many journals have a policy of not publishing replications. Kahn and Scott (1997) introduced the only formal measure of research activity, described above. However, this measure still omits many of the research activities just mentioned and there is little on its psychometric properties.

Finally, although there has been considerable investigation into what factors might relate to research activity, there has been little in the way of coherent theory to explain how these factors interact. Holttum and Goble (2006) have constructed an intricate model using the theory of planned behaviour and support has been found for the central tenets of this by Eke et al. (in submission). Further research is needed to corroborate this theory.

Research Recommendations.

Several lines of enquiry warrant further attention. Firstly, it would seem useful to revisit the components of the RTE and to assess if this fits with the experiences of trainees or if other variables might have a role to play, particularly the supervisory relationship, which, although partially captured, might be one component requiring more emphasis. Qualitative research may prove useful for this task, as themes could be developed based on psychologists' experiences.

Secondly, in a similar vein, more research into influences beyond training, particularly in NHS settings, is needed to understand how the RTE fits with these and what its impact is on research activity once trainees have qualified. Again, qualitative approaches may be useful

here. More longitudinal research along the lines of Mallinckrodt and Gelso's (2002) study is also needed to understand the developmental nature of factors that impact research activity.

Finally, the factor analysis conducted by Kahn and Scott (1997) has yet to be replicated and there has been little research looking at how these factors relate to research activity. It would be beneficial for future research to reconsider this factor structure to aid in understanding how best to conceptualise the RTE and its impact on research activity.

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Section B: Empirical Paper

A Mixed Methodology Investigation into the Influences on Research Activity among UK Clinical Psychologists

Word Count: 8000

SALOMONS
CANTERBURY CHRIST CHURCH UNIVERSITY

Abstract

Low levels of clinical psychologist research activity are repeatedly highlighted within the literature. Several potential influences have been identified with the majority of investigation directed towards the research training environment (RTE) and mediators of this factor. A model has been proposed using the theory of planned behaviour to explain research activity and preliminary support has been found for this. The current study took a more in-depth look at the active ingredients of the RTE, as well as aspects beyond training in the workplace. Factor analysis revealed two second order factors within the RTE that differed from an earlier two-factor solution in the literature. These were labelled stimulation and expectations. The relationship between stimulation and intention to do research was shown to be mediated by theory of planned behaviour components, whilst expectation maintained a direct relationship with intention. Thematic analysis of comments from clinical psychologists relating to influences on their research activity supported some of these findings, but also identified new barriers and facilitators of research activity relating to the work environment. Further research exploring both training and practice contexts is called for and implications for training and practice are made.

Introduction

Investigations have repeatedly found low levels of research activity among counselling and clinical psychologists, the modal number of publications routinely reported as zero (Norcross, Karpiak & Santoro, 2005). Several lines of enquiry into factors that promote or inhibit research activity among clinical psychologists have emerged, with the most developed being that of the research training environment (RTE). Gelso (1979) suggested that the RTE needed ten key components to develop active researchers, including:

1. Faculty modelling appropriate scientific behaviour (faculty modelling).
2. Positive reinforcement of scientific activity (positive reinforcement)
3. Early, non-threatening involvement in research (early involvement).
4. Separating out research from statistics (separating statistics).
5. Teaching students to look inwards for research ideas (looking inward).
6. Teaching science as a social experience (research as social).
7. Teaching that all research is flawed (flawed research).
8. Teaching varied investigative styles (varied styles).
9. Wedding of research and clinical practice (research-practice links).
10. Focusing on how research is conducted in the workplace.

Terms in parentheses shall be used hence-fourth. Measures of the training environment (Royalty, Gelso, Mallinckrodt & Garrett, 1986; Gelso, Mallinckrodt & Judge, 1996) were developed to assess nine of these ten components, number ten being omitted due to concerns about validity. Investigation has typically used counselling psychology students in the US and correlational designs associating the RTE with research activity. Support exists for a relationship between research attitudes/productivity and; faculty modelling (Royalty et al.,

1986), flawed research (Mallinckrodt, Gelso & Royalty, 1990) research-practice links (Mallinckrodt et al., 1990), early involvement (Krebs, Smither & Hurley, 1990) research as social (Mallinckrodt & Gelso, 2002), positive reinforcement (Royalty et al., 1986) and separating statistics (Mallinckrodt & Gelso, 2002). Similar evidence has also been found for the overall RTE (Krebs et al., 1990; Mallinckrodt & Gelso, 2002; Mallinckrodt et al., 1990).

Kahn and Gelso (1997) conducted a factor analysis of the RTE, which elicited two second-order factors they termed "instructional" and "interpersonal". Table 1 shows components grouped by factor.

Table 1

RTE Components Categorised by Factor Loadings

Interpersonal Factor	**Instructional Factor**
Faculty Modelling	Flawed Research
Positive Reinforcement	Looking Inward
Early Involvement	Separating Statistics
Research as Social	Varied Styles
	Research-Practice Links

The authors described the interpersonal factor as the product of research-based interactions and experiences, whereas the instructional factor was described as the sum result of didactic exchanges. It should be noted however, that to maintain statistical power, Kahn and Gelso used the nine subscale scores as the starting point for analysis, not individual item scores. This approach assumes that the subscales were observed variables when in fact they were latent, which erroneously implies perfect measurement of the subscales. These findings have never been replicated nor has the association of each factor with research activity been examined.

Possible mediators of the RTE-research activity relationship have included outcome expectations (Bishop & Bieschke, 1998; Deemer et al., 2009), the mentoring relationship (Hollingsworth & Fassinger, 2002) and investigative interest (Bishop & Bieschke, 1998), with mixed support being found for the role of research self-efficacy (Phillips & Russell, 1994; Wright & Holttum, in press). Uncertainty therefore remains as to how the RTE affects research activity and what the key influences are.

In an attempt to make sense of the evidence, Holttum and Goble (2006) produced a model using the theory of planned behaviour (TPB, Ajzen, 1991), that integrated the different variables found to have an impact on some aspect of research activity (see figure 1). TPB suggests that intention to perform a behaviour is influenced by attitudes towards the behaviour, beliefs about how others would judge the behaviour (subjective norms) and perceptions of how much control is held over the behaviour (perceived behavioural control, PBC) (Ajzen, 1991). Intention in turn tends to correlate strongly with actual behaviour (Cooke & Sheeran, 2004). Eke Holttum and Hayward (in submission) empirically tested part of this model in a sample of 374 UK-based clinical psychologists. They found that the relationship between retrospective ratings of the RTE and intention to do research were mediated by current attitudes, subjective norms and PBC but not by research self-efficacy. Attitudes were most predictive of intention, followed by subjective norms and PBC. Self-efficacy and the RTE were not significant.

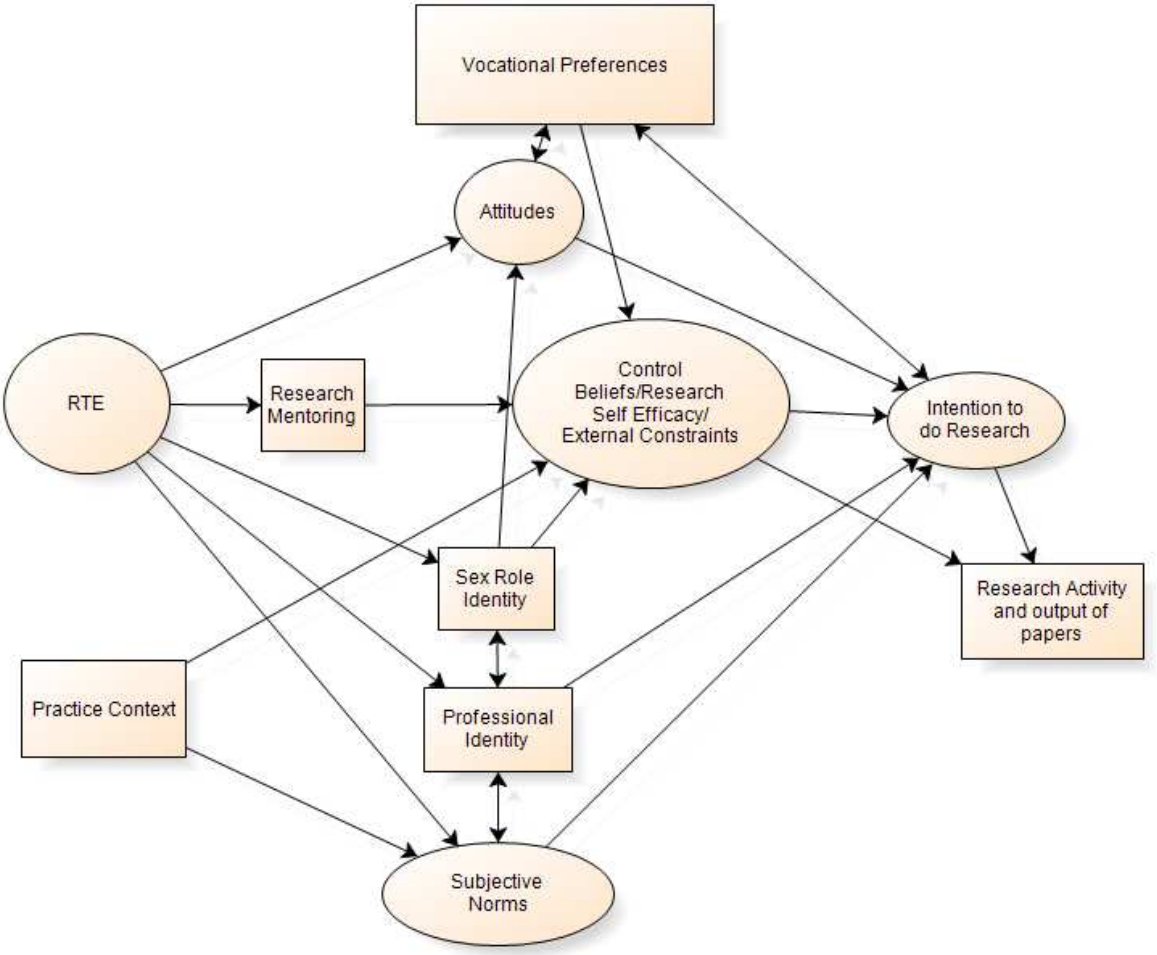

Figure 1. Holttum & Goble's (2006) Theoretical Model. Variables in ellipses represent those tested in Eke et al. (in submission).

Eke et al's. study shows strong support for Holttum and Goble's model, but says little about the active ingredients of the RTE. There is also some question over the validity of intention to do research as an indicator of actual research activity, which is a complex, intricate behaviour, unlike the traditional health-related behaviours typically studied with TPB. A further limitation of the research so far is the strong focus on the RTE, with little consideration given to factors beyond training e.g. aspects of work and personal lives (Hill, 1997), despite suggestion of their powerful effect (Haynes, Lemsky & Sexton-Radek, 1987).

The RTE was also based primarily on Gelso's personal observations about what may be important components of training and little attention has been paid to other potentially influential aspects of training. Both these limitations are amenable to qualitative research, geared towards deriving themes from both training and practice contexts.

The use of journal publications as a measure of research activity is also questionable, as it would seem to exclude many other research activities used in practice such as service evaluation, audit, research supervision and critical evaluation. It also excludes unpublished research and is confounded by journal policies regarding what is regarded as publication material (for example good quality replications may be rejected as insufficiently original).

Rationale

The present study aimed to gain a greater understanding of the role of factors in the RTE and further explore influences on research beyond training. Assessing the robustness of Kahn and Gelso's (1997) factor structure and examining the role of these factors in predicting research intention would seem crucial for training-course development. Exploration of what might influence research activity beyond training also seems vital to sustaining research activity. These areas were explored in the present study with respect to Holttum and Goble's (2006) model.

Quantitative data collected by Eke et al. (in submission) were used to examine the factor structure of the RTES-R and the role of each factor in relation to intention to do research using mediation analysis. Eke et al. also collected qualitative comments that were not analysed, but were used in this study to consider influences on research activity beyond training.

Hypotheses

Based on the existing literature and Holttum and Goble's (2006) theoretical model, the following hypotheses were made:

1. A similar two-factor solution to that discovered by Kahn and Gelso (1997) will be found.

2. Regarding how these factors would then relate to intention, figure 2 depicts the predicted model. It was expected that:
    a. Both factors would be directly related to intention, not controlling for other variables.
    b. Attitudes, subjective norms, perceived behavioural control and research self-efficacy would be directly related to intention.
    c. Attitudes, subjective norms and research self-efficacy would mediate the relationship between the interpersonal factor and intention. This seemed likely as the interpersonal factor was related to the more social aspects of research that might affect subjective norms and attitudes, but also build self efficacy.
    d. Attitudes, perceived behavioural control and research self-efficacy would mediate the relationship between the instructional factor and intention. This hypothesis was made since the instructional factor represented the didactic, skill transferring aspects of training, likely to affect perceived control, self-efficacy and attitudes.

e. When RTE factors, TPB components and research self-efficacy are entered into a regression with intention as the outcome, a significant amount of variance would be explained.

3. The majority of previous research informing Holttum and Goble's (2006) model was based on trainee/intern samples in the US, whilst the current study involved qualified clinical psychologists in the UK. It was expected that their qualitative comments would feature workplace factors (particularly the NHS), including examples of work-related research attitudes, subjective norms, perceived behavioural control, self-efficacy and themes relating to the recalled elements of the research training environment.

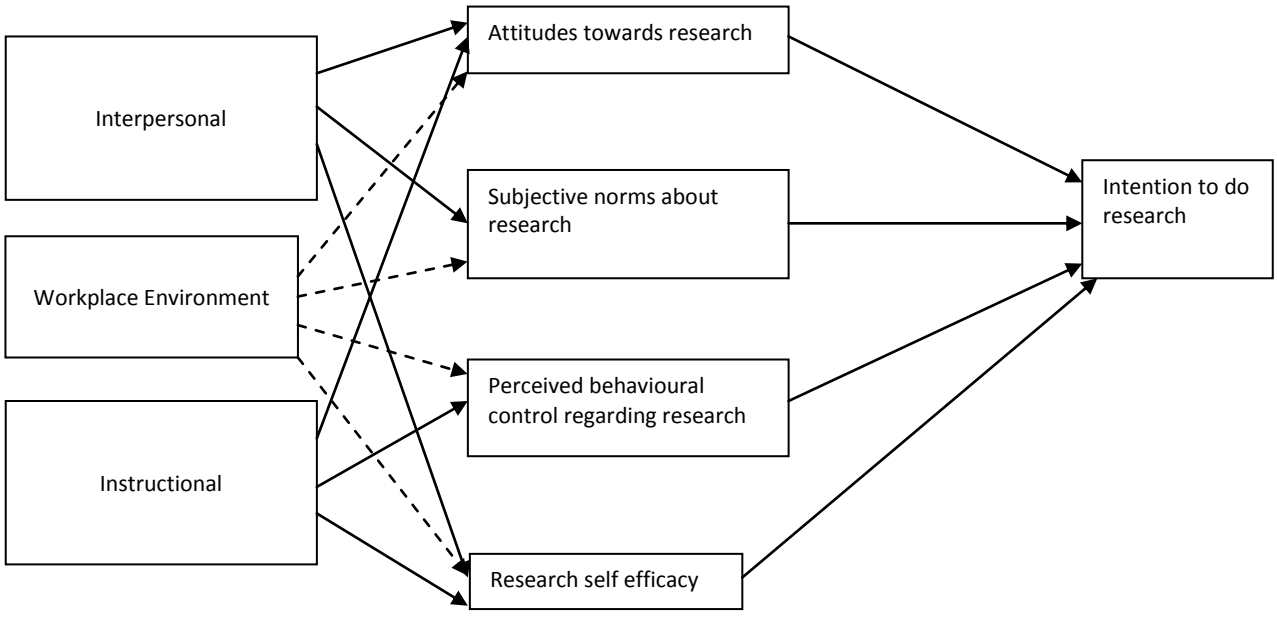

Figure 2. Hypothesised Model. Broken lines indicate hypotheses relating to qualitative data.

Method

Participants

Quantitative Analyses (summarised from Eke et al.).

In Eke et al's. original study 374 qualified clinical psychologists from across the UK were recruited via the British Psychological Society's Division of Clinical Psychology. Eighty-two percent (307) were female, mean age was 41 (SD= 11, range 25-79) and 73% were white British. The majority (265, 71%) held the Doctorate in Clinical Psychology, 7% (23) had completed the "Top-up Doctorate" and 6% (20) held the Statement of Equivalence. Mean number of years since qualification was nine (SD= 10.8, range: 1-56).

Qualitative Analysis.

A subsample of 138 respondents provided qualitative comments on what influenced their research activity. Mean age was 43 (SD= 12, range: 25-79), 79% (109) were female and 76% were white British. Sixty-three percent (87) held the DClinPsy, 9% (12) held the "Top-up Doctorate" whilst 6% (8) held the Statement of Equivalence. Mean number of years since qualifying was 14 (SD= 12, range: 1-56).

Design

Eke et al's. study used a correlational design in which packs of measures were sent via post to a random sample of clinical psychologists. The quantitative data from this study were also analysed using a correlational design, but looking at RTE factors instead of the total RTE. In addition, qualitative data collected but never analysed were investigated via thematic analysis.

Measures

A copy of the questionnaire pack containing all measures can be found in appendix 4.

Research Training Environment Scale-Revised-Short Version (RTES-R-SV).

The RTES-RSV is a 27-item measure using Likert responses from 1 (not at all) to 5 (strongly agree). It contains nine subscales measuring the RTE components listed above, and has a Cronbach's alpha of .87, reported by Hollingsworth and Fassinger (2002), who adapted the RTES-RSV from the RTES-R, (Gelso, Mallinckrodt & Judge, 1996). Eke et al. rephrased items into the past tense, making it relevant to ex-trainees (Cronbach's alpha= .89).

Research Outcomes Expectations Questionnaire (ROEQ).

The ROEQ (Bieschke & Bishop, 1994) comprised the measure of attitudes towards research and is a 20-item measure utilising Likert responses from 1 (strongly disagree) to 5 (strongly agree). Bieschke and Bishop reported Cronbach's alpha of .89. Eke et al. modified the scale to include four additional items pertaining to themes found to be relevant in an elicitation study they ran to develop theory of planned behaviour measures for their study (alpha= .87.)

Self-Efficacy in Research Measure (SERM).

The SERM was used to assess research self-efficacy, and is a 12-item measure of confidence in a variety of research activities developed by Kahn and Scott (1997). Respondents rate their confidence on Likert scales from 0 (no confidence) to 9 (total confidence). Kahn and Scott reported a Cronbach's alpha of .90. Eke et al. removed two items not applicable to clinical psychologists and added an item regarding qualitative analysis (alpha= .93).

Perceived Behavioural Control (PBC).

Eke et al. created a measure of PBC from an elicitation exercise in their original study using the methods of Frances et al. (2004). This is a 17-item scale on which respondents rated the extent to which they agree with statements regarding their control over research behaviours, from 1 (strongly agree) to 7 (strongly disagree). Internal consistency was .90 (alpha) and test re-test reliability was $R=.84$, $p<.001$.

Subjective Norms.

A measure of subjective norms was created in the same manner as the PBC measure. This comprised a 15-item measure with the same Likert response scale asking about the beliefs of others regarding research activity. Test re-test reliability was $R=.72$, $p<.001$ (alpha= .81).

Intention to do Research.

Three items were created using the approach of Francis et al. (2004) to measure the dependent variable of intention. Respondents rated each item using a 5-point Likert scale (1 disagree - 5 agree). Analysis of the distribution of this scale in Eke et al. found there to be a bimodal response pattern with more responses at the extreme ends than around the midpoint. They therefore converted the data into a dichotomous variable with the categories "low" and "high" intention (alpha= .91).

Qualitative Comments.

At the end of the pack of measures was a space for further comments with the instructions:

> If you have any comments or would like to provide any further information about what has influenced your research activity, the experience of completing this

questionnaire or anything else you feel is important and relevant, please use the space overleaf.

Comments written in this space comprised the qualitative data.

Procedure

Ethical approval for Eke et al.'s study was granted by the Salomons ethics panel, and permission to use their data in the current study was granted by Eke. Ethical approval for the current study was further granted by the Salomons ethics panel (Appendix 5).

In the original study questionnaire packs were sent from the DCP via post to 1333 qualified clinical psychologists. Usable packs were returned by 374 respondents, giving a response rate of 28%. Participants were anonymous and consent was implied by participation.

Analyses

All quantitative analyses were conducted with Statistical Package for Social Sciences (SPSS) version 17.

Factor Analysis.

Hypothesis 1 was investigated via factor analysis. To allow for comparison with Kahn and Gelso's (1997) findings, their approach was adopted here, i.e. the nine subscale scores were used as the level of analysis, rather than individual item scores. As in Kahn and Gelso's study, this enabled the analysis to adhere to recommended parameters regarding sample size. Tabachnick and Fidell (2007) recommend at least 300 participants for factor analysis whilst Nunnally, (1978) has suggested 10 participants per variable. Both criteria were satisfied in

this study. A principal components analysis with oblique rotation was conducted. Oblique rotation was chosen as it allowed for correlation between subscales and was used by Kahn and Gelso (1997).

Correlations.

Hypotheses 2a-b regarding direct relationships between variables were investigated with a series of bivariate correlations.

Mediation Analysis.

Hypotheses 2c-d were assessed with the Baron and Kenny (1986) approach to mediation analysis, using linear and logistic regression, the latter for use with the dichotomised intention outcome variable. Figure 3 is a graphical representation of a mediation relationship. For a variable to be considered a mediator, it must; (1) be related to the predictor variable (path a), (2) be related to the outcome variable (path b), and (3) when both the predictor and the mediator are entered into a regression simultaneously, a previously significant relationship between the predictor and the outcome (path c) is reduced in strength (path c').

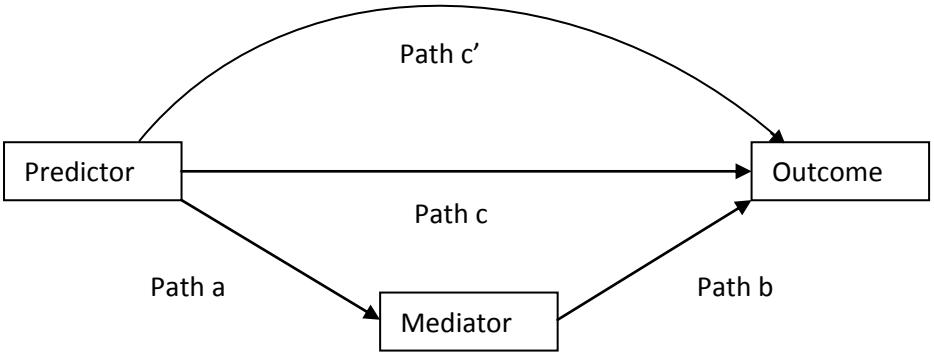

Figure 3. Graphical Representation of a Mediation Model.

Regression.

A final logistic regression with all predictor variables was conducted to investigate hypothesis 2e. Green's (1991) rule for calculating required sample size suggested a minimum of 110 participants were needed and Miles and Shevlin's (2001) approach suggested that with six predictor variables 50 participants would detect a large effect size whilst 100 would detect a medium effect size. Both these criteria were met.

Thematic Analysis.

Using the method outlined by Braun and Clarke (2006), theoretical, "top-down" thematic analysis of the qualitative comments was conducted to assess hypothesis 3. This approach was chosen as it can be used with a relatively small amount of data, aims to identify and map out themes pertaining to a specific topic, and can search for both hypothesised and emergent themes, allowing comparison to Holttum and Goble's (2006) model. An essentialist/realist epistemology was adopted to allow comparison with previous positivist research.

Braun and Clarke's six analytic phases were adapted for theoretical thematic analysis as follows; 1) familiarisation with the data; 2) coding data for existing themes and generating new codes; 3) reviewing existing themes and searching for emergent themes; 4) reviewing all themes; 5) defining and naming themes; and 6) producing the report. Analysis was conducted with Nvivo version 8 software.

Results

Demographics

Eke et al. (in submission) found that lower intention was significantly related to being older ($r=.22$, $p<.001$), working fewer hours ($r=.16$, $p<.001$), having children ($\chi^2(1, 336)= 7.70$,

$p<.05$) and having time out from career (χ^2 (1, 336)= 5.24, $p<.05$) and so included these variables in their mediation analyses, to partial out their effects. The same procedure was applied here, since the same data were being analysed.

Factor Analysis

A principal components analysis was conducted on the nine subscale scores of the RTES-R-SV with oblique rotation (oblimin method). The Kaiser-Meyer-Olkin measure, KMO = .79, indicated "good" sampling adequacy (Hutcheson & Sofroniou, 1999), and Bartlett's test of sphericity indicated that correlations between subscales were sufficiently large for PCA (χ^2 (36) = 1040.86, $p< .001$). The initial analysis revealed two factors with eigenvalues above Kaiser's (1960) criterion of 1 (3.4 and 1.8 respectively). This was further confirmed by the scree plot, which showed the point of inflexion at the third factor, suggesting that the first two factors be retained (Catell, 1966). The total variance explained by these two factors was 58.4%. Table 2 displays the rotated factor loadings from the pattern matrix. As can be seen, the nine subscales fitted neatly into two factors, which did not replicate those of Kahn and Gelso (1997), but can nonetheless be viewed as coherent and were labelled Stimulation and Expectations. This disconfirmed hypothesis 1.

Table 2

Second Order Factor Loadings for RTES-R-SV Subscales (oblique rotation).

Subscale	Second Order Factors	
	Stimulation	**Expectations**
Research as Social	**.84**	-.05
Research-Practice Links	**.81**	-.003
Faculty Modelling	**.77**	.07
Looking Inward	**.71**	-.07
Early Involvement	**.70**	.113
Separating Statistics	**.69**	-.06
Varied Styles	.08	**.80**
Flawed Research	-.05	**.79**
Positive Reinforcement	-.03	**.73**

N= 363.

Examination of the respective items suggested that the stimulation factor was tapping aspects of training that stimulate creativity and an interest in the multifaceted nature of research, particularly the applied and social aspects of it. The expectations factor appeared to relate to the views, beliefs and expectations regarding how research should be conducted, how advanced it should be and how valued it is, as promoted by staff running training courses.

Revised Hypotheses

Hypotheses 2a, and 2c-d were made on the basis that the instructional and interpersonal factors extracted in Kahn and Gelso (1997) would also be derived here. As a different two factor solution was discovered these hypotheses were altered as follows. Figure 4 depicts the newly hypothesised model.

2a. Both factors were still hypothesised to be directly related to intention.

2c Given that the stimulation factor encompassed 6 of the 9 RTE variables, and findings from Eke et al., it seemed logical that stimulation would be related to all mediators, since it could be argued that to be stimulated, an individual needs to hold positive attitudes, feel supported by others (subjective norms), feel able to conduct research (PBC) and feel confident in his/her research skills (self-efficacy). It was therefore predicted that these variables would mediate the stimulation-intention relationship.

2d. In contrast however, the expectations factor was much narrower in its remit, and it was hypothesised to relate most strongly to subjective norms, given the conceptual overlap between these variables, and also to attitudes, as it seemed possible that attitudes regarding research are influenced by the expectations transmitted in the training environment. These variables were therefore hypothesised to mediate the expectations-intention relationship.

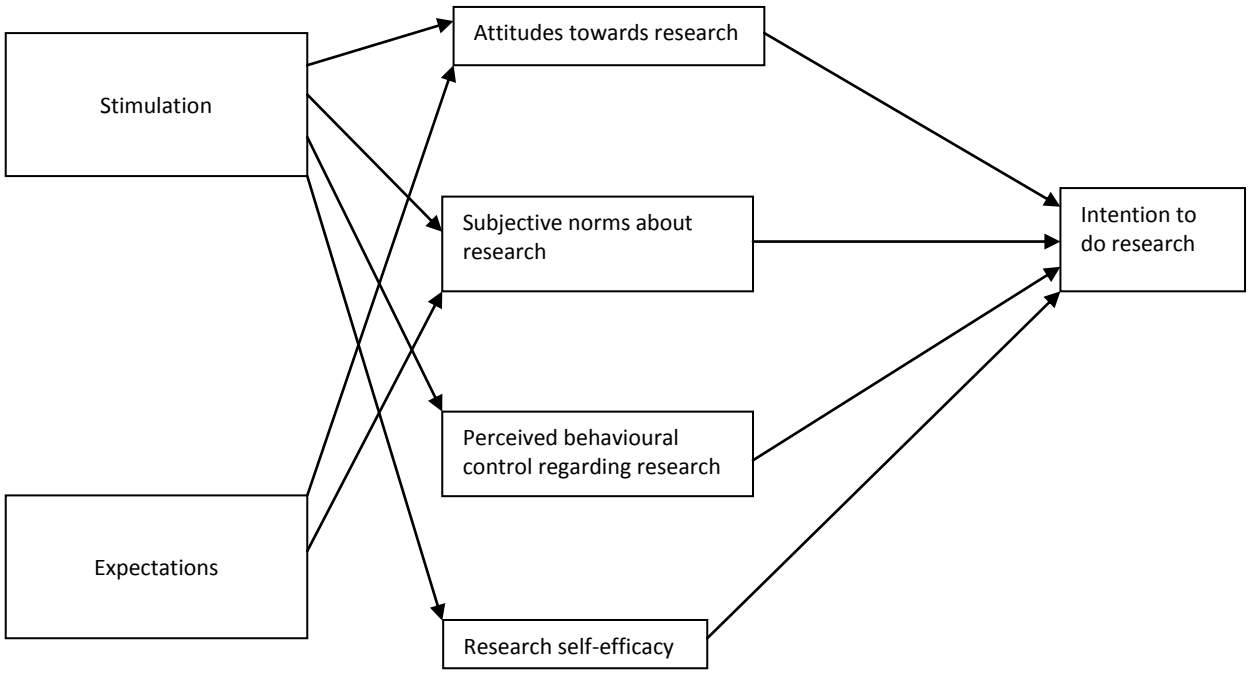

Figure 4. Newly Hypotheised Model.

Relationships between Variables

To test direct relationships, factor scores for the newly identified stimulation and expectations factors were calculated for each participant using the regression method (Tabachnick & Fidell, 2007) and used in subsequent analyses. Bivariate correlations among all variables were conducted. Table 3 displays the results.

Table 3

Correlation Matrix between Main Variables

	Expectations	**Attitudes**	**Subjective Norms**	**Perceived Behavioural Control**	**Research Self Efficacy**	**Intention to do Research**
Stimulation	.01	.221**	.119*	.175**	.358**	.155**
Expectations		.157**	.068	.065	-.008	.180*
Attitudes			.512**	.235**	.292*	.425**
Subjective Norms				.446**	.191**	.527**
Perceived Behavioural Control (PBC)					.385**	.380**
Self-Efficacy						.307**

Values are Pearsons R.
Cases excluded pairwise; N min = 321, max = 363
*p<.05. **p<.01.

As can be seen, all variables were significantly and positively related to intention, confirming hypotheses 2a and b. Interestingly though, expectations did not significantly correlate with subjective norms, meaning that part of hypothesis 2c suggesting that the expectations-intention relationship would be mediated by subjective norms, could not be supported. Intention correlated strongest with subjective norms.

Mediation Analysis

Assumptions.

Tolerance values were all above 0.1 and VIF statistics were all below 10 for all predictors suggesting absence of multicollinearity, as required for regressions. Coefficients for interaction terms between main predictors and their logs were all non-significant, meeting the assumption of linearity of the logit for logistic regression.

Figure 5 displays the predicted mediations. Note that in light of the non-significant correlation between expectations and subjective norms, the hypothesised relationship between these variables is not depicted here.

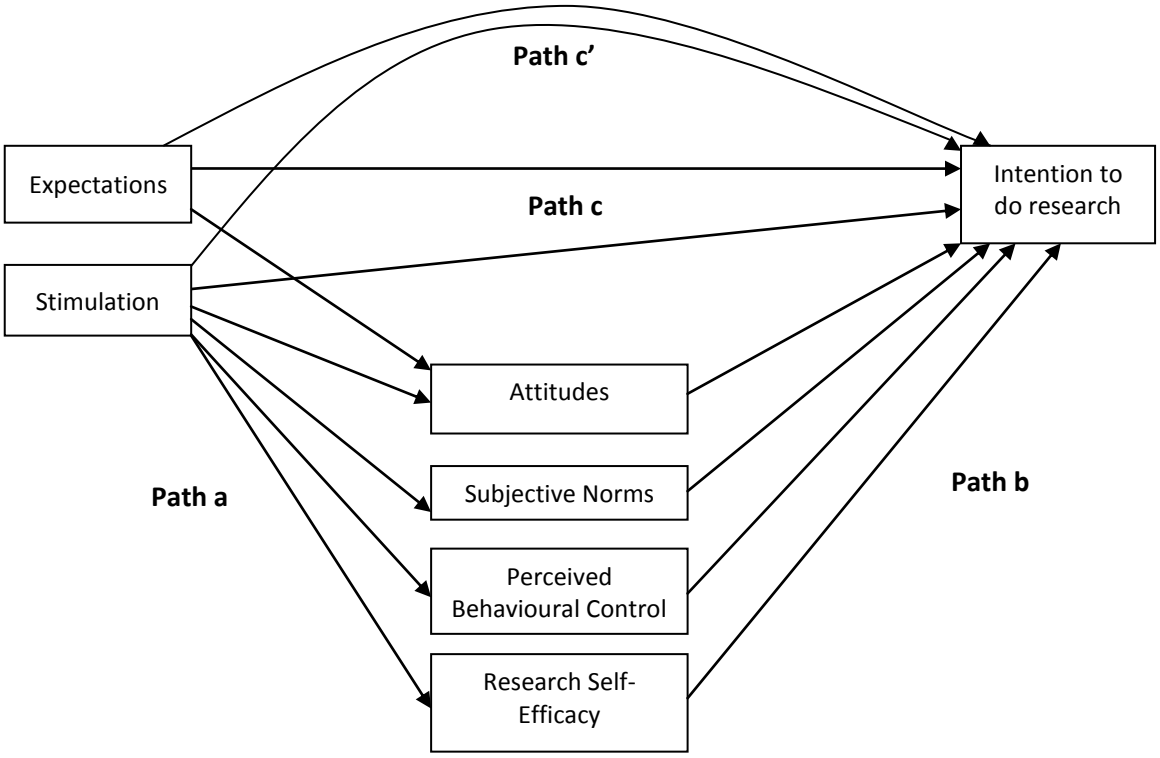

Figure 5. Hypothesised Mediation Model

Path a.

Linear regression was used to assess the hypothesised relationships between the predictor variables (stimulation and expectations) and the mediator variables (TPB components and research self-efficacy). Stimulation and expectations were entered as simultaneous predictors to control for their effect on each other, along with the demographic variables noted above. As indicated in Table 4**,** stimulation significantly predicted all mediators bar subjective norms, whilst expectations significantly predicted attitudes.

Table 4

Relationships between Predictor and Mediator Variables

Predictor	**Mediator**	**β**	**Std. Error**	**T**
Stimulation	**Attitudes**	.211	.054	3.913***
	Subjective Norms	.100	.057	1.744
	PBC	.171	.056	3.060**
	Self-Efficacy	.340	.051	6.617***
Expectations	**Attitudes**	.122	.053	2.287*

β = standardised Beta coefficient.
*p<.05. **p<.01. ***p<.001

None of the demographic variables were significant when predicting attitudes, however a mixed picture occurred with the other variables. In the case of subjective norms, neither of the hypothesised predictors were significant, but age and hours worked were; age: β= -.149, SE=. 062, t= -2.382, p<.05, hours worked: β= -.135, SE= .065, t= -2.073, p<.05. This suggested that younger participants and those working fewer hours held more favourable subjective norms regarding research.

Time out significantly predicted PBC (β= .179, SE= .069, t= 2.592, p<.05), whilst hours worked was significant for self-efficacy (β= .150, SE= .058, t= 2.594, p<.05), indicating that those who had time out from their careers perceived more control over their research

behaviour, whilst those who worked longer hours rated themselves as having greater self-efficacy.

Path c.

The effect of the predictors (stimulation, expectations) on the outcome (intention), not controlling for the mediators was assessed using logistic regression. Stimulation and expectations were again entered simultaneously along with the demographic variables to account for their effects on each other. Table 5 shows that both stimulation and expectations were significantly related to intention, (further supporting hypothesis 2a), with expectations having a slightly stronger relationship. Age was the only demographic variable to still hold significant in this regression (β= -.31, SE= .012, Wald= 6.299, Exp β= .970 p<.05), suggesting that older participants were less likely to fall into the high-intention category.

Table 5

Direct Effect of Stimulation and Expectations on Intention to do Research, not controlling for Mediator Variables.

	β	**Std. Error**	**Wald**	**Exp β**
Stimulation	.285	.117	5.944*	1.309
Expectations	.336	.122	7.601**	1.374

β= unstandardised Beta coefficient.
*p<.05. **p<.01

Paths b and c'.

The relationships between the mediators (TPB components, self-efficacy) and the outcome (intention), controlling for the predictors (stimulation, expectations) were analysed using two logistic regressions; one for the variables hypothesised to mediate the stimulation-intention relationship and one for the variable expected to mediate the expectations-intention relationship. Demographic variables and both factors were again entered simultaneously to

control for their effects. Table 6 displays the results of the regression for the stimulation-intention mediators.

Table 6

Effect of Mediator Variables on Intention to do Research (path b), controlling for Stimulation *(path c')*

		β	Std. Error	Wald	Exp β
Path b	**Attitudes**	.080	.015	28.884***	1.083
	PBC	.053	.010	26.150***	1.055
	Self-Efficacy	.010	.009	2.023	1.012
Path c'	**Stimulation**	-.174	.161	1.167	.840

β = unstandardised Beta coefficients.
*p<.05. **p<.01. ***p<.001

As can be seen attitudes and PBC were significantly related to intention, whilst self-efficacy was not. The relationship between stimulation and intention was reduced to non-significance with these mediators included in the equation, suggesting full mediation had been achieved (Baron & Kenny, 1986). Seperate Sobel's tests for the significance of the indirect pathways via attitudes and perceived behavioural control were conducted using the McKinnon and Dwyer (1993) method for dichotomous outcome variables. These tests supported the results, showing paths c and c' to be significantly different for attitudes (Z= 3.152, p<.001) and for perceived behavioural control (Z= 2.646, p<.01), thus partially supporting hypothesis 2c.

Table 7 shows the results of the regression for the expectations-intention relationship. Attitudes was significantly related to intention, however, expectations was also still a significant predictor of intention, with a very small decrease in the strength of the relationship (Exp. B difference = .020). This indicated that attitudes was a partial mediator of the expectations-intention relationship, showing limited support for hypothesis 2d. Sobel's test

confirmed this finding, showing that paths c and c' were not significantly different (Z= .79, p>.05).

Table 7

Effect of Attitudes *on Intention to do Research (path b), controlling for Stimulation (path c')*

		β	**Std. Error**	**Wald**	**Exp β**
Path b	**Attitudes**	.077	.012	38.689**	1.080
Path c'	**Expectations**	.303	.132	5.255*	1.354

β = unstandardised Beta coefficients.
*p<.05. **p<.001

Age was also a significant predictor in both of the preceding regressions (β= -.032, SE=.016, Wald= 3.970, Exp. β= .968, p<.05 and β= -.030, SE= .014, Wald= 4.824, Exp. β= .917, p<.05 respectively). This further demonstrated the unique and negative relationship age appeared to have with intention.

Figure 6 depicts the results of the mediation analyses. As can be seen, stimulation no longer directly predicts intention, but rather affects it indirectly via attitudes and perceived behavioural control. Expectations however, appears to have both a direct and indirect effect on intention, the latter being mediated by attitudes.

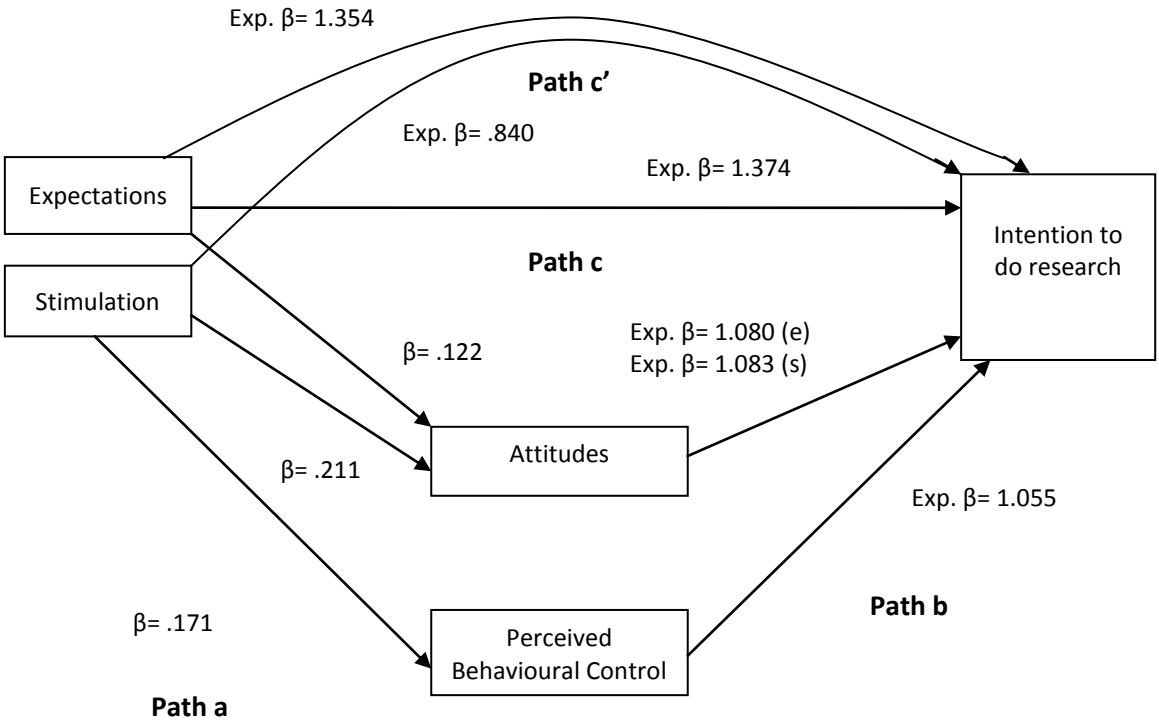

Figure 6. Results of Mediation Analyses. Path a shows standardised β coefficients, paths b, c and c' show exponentiated β coefficients. (e) coefficient with expectation as predictor. (s) coefficient with stimulation as predictor.

Overall Model Testing.

To assess how much total variance in intention was explained by the other variables, a hierarchical logistic regression was conducted using forced entry. Age was entered into block one of the model due to its significant relationship with intention seen in the mediation analysis, and its status as a causal variable, i.e. none of the other variables could cause age. The two factors, TPB components and self-efficacy were entered into block two. Table 8 displays the results.

Table 8

Results of Hierarchical Logistic Regression Predicting Intention to do Research

	Predictor	**β**	**Std. Error**	**Wald**	**Exp β**
Block 1: R^2 = .034 (Cox & Snell), .045 (Nagelkerke). Model χ^2 =10.058, p<.01	Age	-.30	.016	3.530	.971
Block 2: R^2 = .383 (Cox & Snell), .512 (Nagelkerke). Model χ^2 =142.602, p<.001	Stimulation	-.200	.177	1.273	.819
	Expectations	.445	.185	5.813*	1.560
	Attitudes	.051	.016	10.213***	1.052
	Subjective Norms	.131	.026	24.799***	1.140
	Perceived Behavioural Control	.033	.011	8.533**	1.034
	Research Self Efficacy	.021	.010	4.933*	1.021

β = unstandardised Beta coefficients.
*p<.05. **p<.01. ***p<.001

When all variables were entered, the model was able to accurately classify 80% of cases as having either high or low intention and accounted for between 38% (Cox & Snell) and 51% (Nagelkerke) of the variance in intention, which was significant (χ^2 =142.602, p<.001), supporting hypothesis 2e. As can be seen, neither age nor stimulation remained significant predictors when entered with the other variables, whilst expectations had the strongest relationship to intention (Exp. β= 1.56), indicating that an increase of one on the expectations score increased the odds of being classified as high intention by 1.56 times. All other variables were significant, subjective norms being the strongest and self-efficacy being the weakest. Neither of these variables acted as mediators, indicating the unique impact they had on intention. Figure 7 is a model summary of the quantitative findings. These shall be further considered in the discussion.

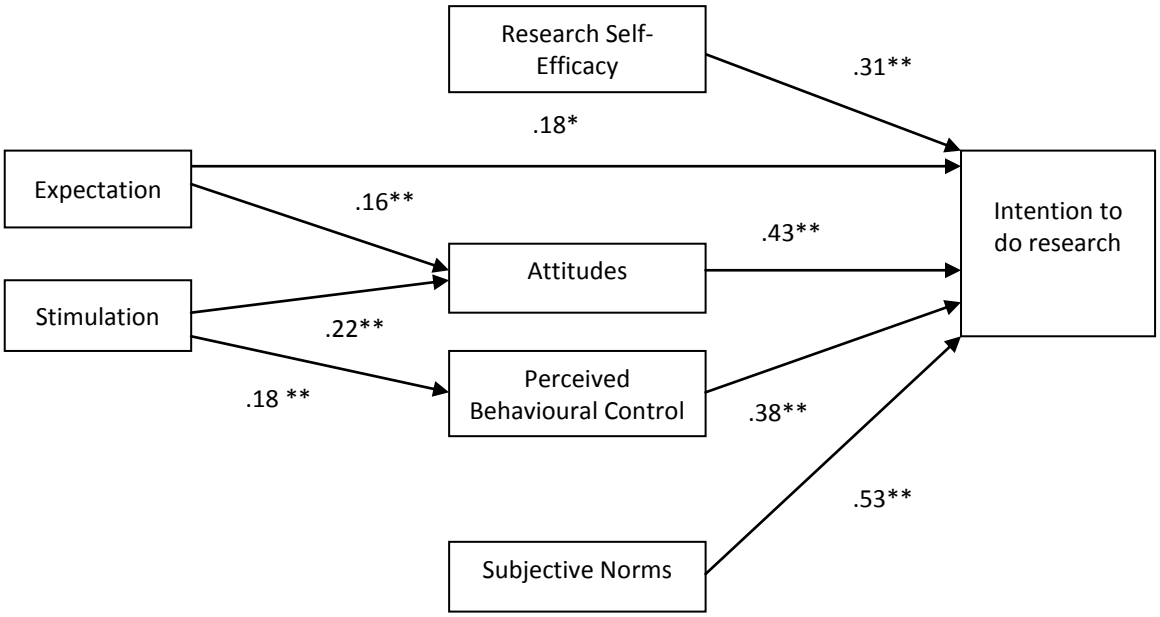

Figure 7. Model Summary of Quantitative Analyses. Values are zero order Pearson's R correlations. *p<.05. **p<.01

Thematic Analysis

Biases.

Part of the analytic process involves reflecting on one's own position in relation to the topic area prior to analysis. The most important point to note here is that at the time of writing, the author was a trainee clinical psychologist approaching the end of training, but still very much embedded in his own research training environment. Appendix 6 contains other relevant experiences.

Inter-rater Reliability.

To assess inter-rater reliability of thematic coding, a Cohen's kappa was computed for one-third of the data, following the procedure described by Kinnear and Gray (2008). Results suggested adequate reliability (K=.663; p<.001).

Themes.

Holttum and Goble's (2006) model, depicted in figure 1, was the starting point for analysis. The components of this model were used as themes for which data were coded. Themes where little or no data were coded were discarded and where data pointed to a new theme, this was added to the model. This process was repeated until the final model in figure 8 remained. A more detailed account of this process can be found in appendix 7. Intention to do research and research activity were removed immediately, as this was the phenomenon in question. Each theme shall be discussed using a selection of extracts (see appendix 8 for further examples).

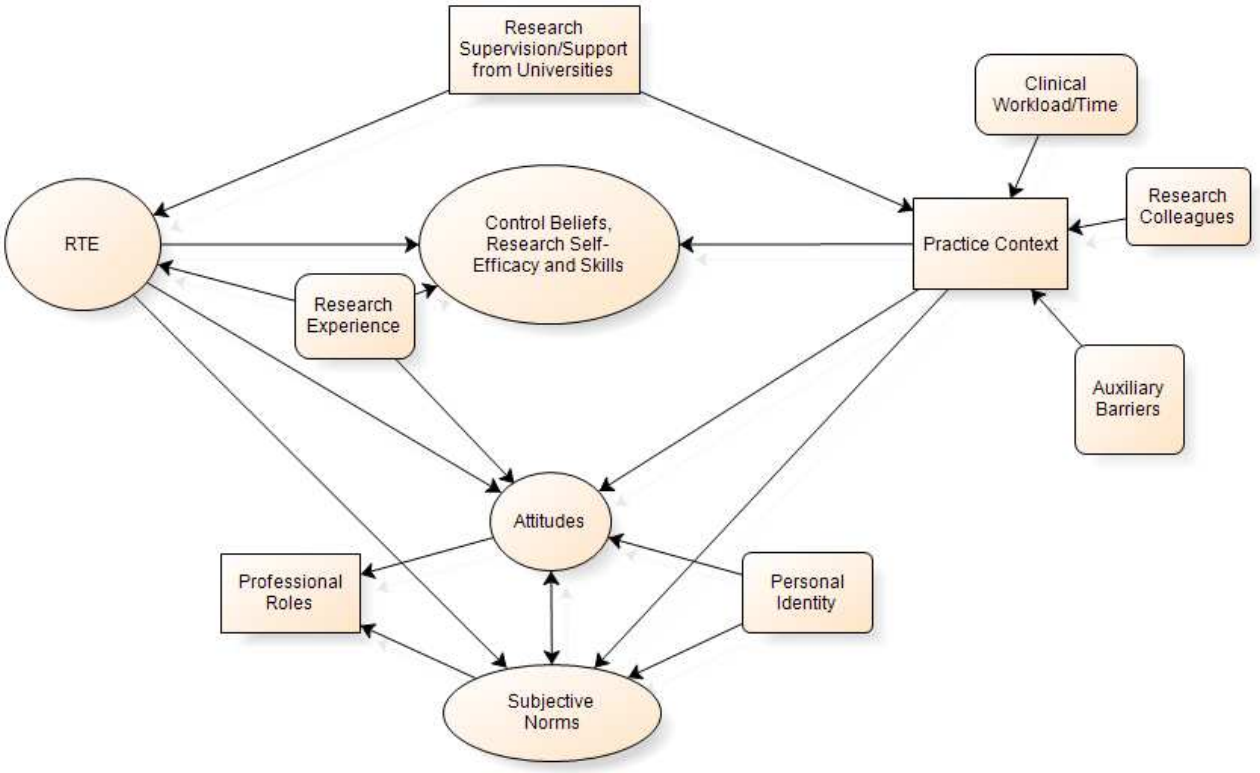

Figure 8. Final Thematic Map. Ellipses represent themes tested in the quantitative analyses; square edged boxes represent themes retained from Holttum & Goble's (2006) model; round-edged boxes represent emergent themes.

Practice Context.

The majority of comments related to aspects of the practice context that affected research activity, and what began as a single variable expanded into an overarching theme with three discrete sub-themes that shall be discussed in turn. The main practice context theme captured the vast number of comments indicating that research was not often sanctioned within the NHS as part of the clinical psychologist role:

> You cannot expect to be able to do research as a routine part of your job...

In some cases power (or lack of it) was attributed as a cause of this, and it was felt that more could be done to address this issue:

> Psychology where I work has little power as a profession and many/most of our activities are dictated by general non-psychology management.

Funding was also perceived as a strong influence, particularly if research generated income:

> Research needs to be integrated into Trust business strategy/goals and function as part of a bigger plan that benefits the trust somehow, e.g. generating income.

Clinical Workload/Time.

This sub-theme had the largest number of comments coded under it. Lack of time seemed to be the biggest barrier to research in the workplace, and occurred in several ways. Direct clinical care was considered the main priority within the NHS:

> Our trust is now a foundation trust and the most important thing is the number of clients that you see – research is not high on the agenda.

This seemed to mean that research fell low in terms of priorities:

> Clinical demands push research to the bottom of the agenda; it is the first aspect of work to go, the two activities are viewed as competing, no scope for integrating.

Working part-time, in understaffed teams or having a more senior position appeared to augment this effect, e.g.:

> Working part-time places more pressure on clinicians time. Therefore, clinical responsibilities are met and research takes second or third place.

Reflecting the subjective norms variables, investing time in research was felt to be viewed negatively by colleagues and management:

> Colleagues from other professions and managers (who are not research trained) do not view the conduct of research favourably, as they perceive it as taking up clinical time.

Research Colleagues.

Having consistent and supportive contact with research-friendly colleagues from psychology and other disciplines seemed highly beneficial to the research process, particularly partnership working on projects and having research-specific networks:

> The most successful ways are department wide, co-ordinated projects, and/or a climate of supporting-promoting research activity within dept./specialty.

Auxiliary Barriers.

This sub-theme incorporated a number of other hurdles to overcome in the research process, including gaining approval from NHS ethics committees and Trust research and development departments, getting work accepted for publication and accessing resources such as literature databases:

> Further, my experience of NHS R&D departments and the burden of getting ethics permission are all bad and serve to further damage the carrying out of even relatively simple research projects.

RTE.

In contrast to the practice context, there was relatively little information regarding components of the training environment. The majority of comments within this theme related to how the overall experience of the RTE, rather than specific aspects of it, was perceived as influencing research activity since qualifying:

> I do not feel that my early training encouraged me to develop skills in integrating research with other aspects of work as a clinical psychologist.

Some participants felt that training had little influence on their current research activity:

> This questionnaire focuses too much on what it was like as a trainee. For me that was 29 years ago! Some of the most important influences on my research capability/interest etc have arisen post-training.

Others felt that training did not equip them for research in practice:

> Research undertaken during training does not reflect the possibilities available in clinical practice, e.g. working in a team, writing up papers.

Research Supervision/Support.

The research mentoring variable in the initial model was developed into the theme research supervision/support, which seemed to exert an influence on perceptions of both training and practice. Participants talked about their experiences of research supervision during training in terms of its value;

> I had a poor supervisor for my training research, but hardly saw him. I got excellent support and help from the on-site clinical psychologist who had excellent research skills and was a key person in my development.

There were similar comments regarding work-place experiences, but in addition, many more comments on how access to supervision or support from universities might aid research activity;

> I would really like to be given time and a mentor (? From an academic institution (sic)) to develop research in my workplace/clinical setting.

Research Experiences.

A second theme that seemed to affect participants' experiences of the RTE was research experiences (other than training). There was evidence that having research experience prior to training boosted confidence and skill, making the process of training somewhat easier:

> To start training with existing research experience in a pure research capacity (i.e. University department) made an enormous difference in terms of your grasp of skills, confidence in yourself and ability to work with the training course staff. I doubt I would be completing any research as a clinical psychologist without this prior immersion...

Research experience after clinical training also seemed to impact on participants' views and confidence:

> My current beliefs about research have been positively influenced by my experience in a part-time, 3 year research post, (post-qualification as a clinical psychologist).

Control Beliefs, Self-Efficacy and Skill.

This was a prevalent theme that captured how participants' confidence in their research skills seemed to influence their beliefs about their ability to conduct research. Not using research skills over time was felt to result in their deterioration:

> Personally, it's been so long since I have done any research that I feel very "rusty" and lack confidence in my skills as a researcher. The prospect of research now feels quite daunting.

As noted in the RTE theme, some participants felt ill equipped by training and this seemed to affect their confidence:

> I have done additional research training (with the open university) since qualifying which is the only reason I have confidence to do further research. My clinical training gave me very limited research skills.

However, research skills were still highly valued and seen as useful for activities other than original research, including audit, service evaluation and supervising trainees:

> ... but also applying these skills to developing service-evaluations and audits within teams I work with and helping teams identify valid and reliable measures they can use to evaluate the impact of their work

Attitudes.

The attitudes participants held towards research varied greatly and could be seen within many of the themes discussed and seemed to be particularly influenced by RTE, the practice context and prior research experience, e.g.;

> The enthusiasm associated with research I felt during my training seems to have faded due to the realities of managing a heavy clinical caseload...

Subjective Norms.

Whilst attitudes related to how the individual perceived research, subjective norms related to how individuals felt their peers saw research. The two appeared to reciprocate, though the central feature of subjective norms seemed to be the disparity felt between subjective norms of the RTE and those experienced at work:

> Whilst clinical training places an emphasis on developing competencies in research – the actual practice of clinical psychology expects a psychologist not to undertake research.

Professional Roles.

Some participants commented on the professional roles clinical psychologists undertake, particularly the feasibility of the scientist-practitioner model. This theme was mixed and seemed largely influenced by attitudes and subjective norms transmitted from training and practice:

> My course led us to view research as an integral part of clinical work

> ... I'm afraid I am viewed as a therapist only... What is particularly disappointing is the realisation that without such opportunities, not only does the profession lose some of its identity but personal opportunities for career progression are affected.

In some cases research was seen as utilitarian, not a routine part of the role:

> The only reason for doing research in my experience is to get qualifications i.e. DClinPsych and PhD.

Personal Identity.

Personal identity seemed to be another theme that impacted on attitudes and subjective norms, capturing the way in which participants' personal lives influenced these constructs, as well as their research activity. Participants seemed to feel that research could infringe on their personal lives in terms of time, stress, relationships and finances, thus deterring research activity:

> In the long term I want to do research again very much but not at the expense of my personal life + well being...

Research seemed to be deemed particularly incompatible with family life and was considered by some to be the domain of younger psychologists, those without families and men, e.g.:

> This, and having the energy and lack of personal responsibility of relative youth enabled me to participate in research and related activities."

Discussion

This study attempted to provide a more in-depth analysis of the influences on clinical psychologists' research intentions, through consideration of Holttum and Goble's (2006) model. Two factors were elicited from the RTE in the current study, termed stimulation and expectation, disconfirming hypothesis 1, which predicted a replication of the findings of Kahn and Gelso (1997). Table 9 below shows a comparison of the two different solutions.

Table 9

Comparison of Factor Loadings from Kahn and Gelso (1997) and the Current Study

SUBSCALE	Factor Loadings			
	Kahn & Gelso (1997) N=173		Current Study N=363	
	INTERPERSONAL	INSTRUCTIONAL	STIMULATION	EXPECTATION
Faculty Modelling	.85		.77	
Early Involvement	.64		.70	
Research as Social	.86		.84	
Positive Reinforcement	.75			.73
Flawed Research		.48		.79
Varied Styles		.76		.80
Research-Practice Links		.67	.81	
Looking Inward		.53	.71	
Separating Statistics		.67	.69	

As can be seen, both factors from the current study overlapped with both factors from Kahn and Gelso, perhaps suggesting that stimulation and expectation aspects of the interpersonal and instructional sides of the RTE were drawn out here. This may be due to the slightly different measures used (RTES-R vs. RTES-R-SV) or more likely the different samples (UK qualified vs. US students). It seems possible that geographical location, type of training or stage in career could cause differences in findings, as with all results presented here. Indeed, some evidence exists suggesting that psychologists' attitudes towards research and perceptions of the RTE alter throughout training (Royalty et al., 1986), and it seems likely that this trend continues post-qualifying. Nevertheless, this was the first study to replicate Kahn and Gelso's factor analysis and a different pattern of factor loadings was found.

Both factors were found to correlate with and predict intentions supporting hypothesis 2a, but only expectations remained a significant predictor of intentions when other mediating variables were taken into account. A final regression showed expectations to be the strongest predictor of intention. Similar direct relationships have previously been found using the

overall RTE (Krebs et al., 1990; Mallinckrodt & Gelso, 2002). However, in these cases the components of the RTE responsible for this relationship were those loading onto the stimulation factor, which in this study had the weaker relationship with intentions. This may suggest that in isolation, the components loading onto expectations have little effect, but together, form a stronger predictor of research intention.

Attitudes and PBC fully mediated the stimulation-intention relationship, and attitudes partially mediated the expectation-intention relationship, showing mixed support for hypotheses 2c and d. Subjective norms and self-efficacy did not mediate either relationship. These results fit with those of Kahn and Scott (1997) and Eke et al. (in submission), who found attitudes, but not self-efficacy to mediate the RTE-research productivity/intention relationship. In contrast, Philips and Russell (1994) and Hollingsworth and Fassinger (2002) did report self-efficacy to have a mediating effect.

Although they cannot prove causation, together, these findings suggest the powerful effect of attitudes, and to a lesser extent, perception of control on intention to do research. Attitudes and control beliefs seem to be formed in part by the more creative, stimulatory aspects of the RTE.

Eke et al. (in submission), however, also found subjective norms to mediate the RTE-intention relationship. This may suggest that whilst subjective norms acts as a mediator for the overall RTE, it does not have a strong enough effect on either factor in isolation.

In a final regression, all mediators were shown to be significant predictors of intention, with subjective norms being the strongest (after expectations). This suggests that subjective norms

and self-efficacy did not act as a function of the RTE, but acted independently, most probably derived from the more salient work environment.

The thematic analysis helped clarify this and other possibilities. Figure 8 depicts the final thematic map and it can be seen that overall, support was found for Holttum and Goble's (2006) model (figure 1). Indeed, the RTE appeared to influence attitudes, subjective norms and control beliefs/ self-efficacy. However, as expected, responses indicated that the practice context played a much greater role and this component was developed in much more detail, supporting part of hypothesis 3. The majority of comments related to aspects of the work environment that influence research. The biggest barrier seemed to be clinical caseload demands and not having protected research time, which fits with findings from Haynes et al (1987). Many participants also noted a disparity between the subjective norms in training compared to work, supporting the above suggestion of subjective norms acting as a function of the workplace, not the RTE.

These findings are particularly interesting in light of Gelso's (1979) original conception of the RTE, which had a tenth component relating to the conduct of research in the workplace, but which was omitted from the RTES due to concerns regarding validity. This component however, appears to be the most influential on research activity post-qualification in the present study, suggesting scope for adding it to the RTES-R.

Working in partnership and having access to experienced research supervisors and universities were seen as the most beneficial factors for conducting research at work, whilst auxiliary barriers such as NHS ethics seemed particularly problematic.

Within the RTE there was not sufficient evidence to support separate sub-themes corresponding to the stimulation and expectation factors, and this may have been due to the more salient work context of the sample. Having access to high quality research supervision during training seemed to improve perceptions of the RTE, as it did in the practice context and supports earlier work suggesting a vital role for mentoring relationships (Hollingsworth & Fassinger, 2002; Kahn & Schlosser, 2010). This factor may also need further incorporating into the RTE. Prior research experience seemed to improve perceptions of the RTE, as well as control beliefs/self-efficacy and skill.

Personal identity and professional roles seemed to be further related to subjective norms and attitudes. These themes seemed to expand the earlier finding of age as a predictor of intention, as it seemed that it may not be age per se, but rather aspects of personal life such as having a family, increasing personal responsibility and more senior management roles that decreased older psychologists' research intentions and this fits with suggestions from Eke et al. (in submission)

The qualitative findings here extend those of Conway (1988), who asked clinical psychologists to identify critical incidents impacting on their careers, and found that responses fitted broadly into categories mapping onto the themes of the RTE, research experience, the practice context and personal identity. They also support the findings of Corrie and Callanan (2001) who, when interviewing therapists about the scientist-practitioner model, found themes regarding the mediating influence of colleagues, and negotiation of external contingencies, reflecting themes here relating to research colleagues and clinical workload/time respectively.

A final model integrating the major quantitative and qualitative findings is displayed in figure 9.

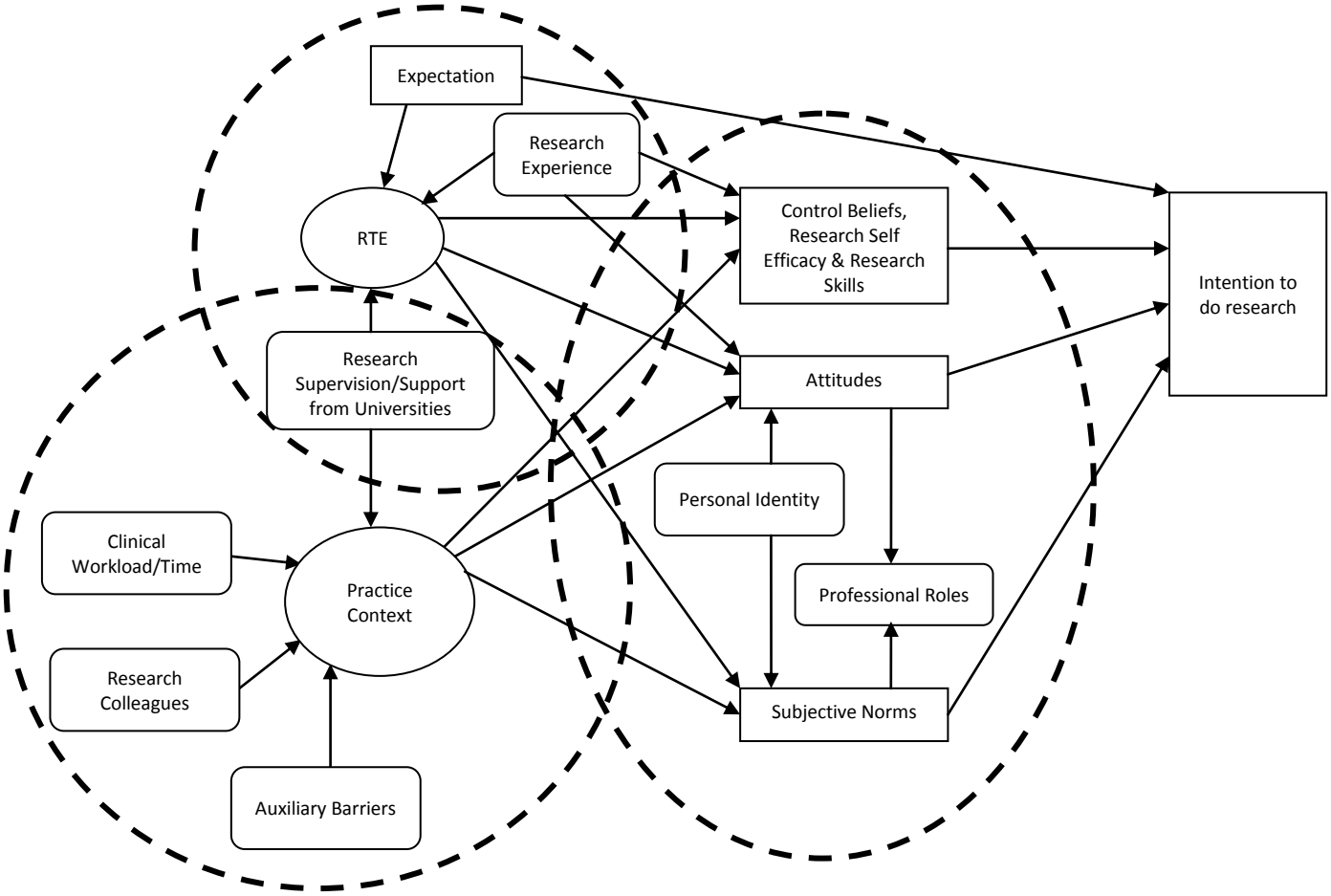

Figure 9. Synthesised Model Integrating Quantitative and Qualitative Findings.

It is suggested that the model best be thought of in terms of three distinct, but overlapping groups of variables; one relating to the RTE, one relating to the practice context and one relating to mediating variables. The RTE and the practice context are temporally exclusive, but both appear to influence the mediators, which are constants and are the pathway through which both contexts influence intention. Personal life, perhaps the other context that appears to influence intention, is incorporated into the mediating variables here, as this is also always present, but rather than influence intention directly, it appears to exert its pressure through

attitudes and subjective norms. More research is needed to substantiate and develop this model.

Research Implications

The RTE needs to be revisited and explored to expand its remit, particularly with respect to research supervision and conducting research at work. Aditional exploratory qualitative research may yet find other key factors. Further factor analyses of the RTES-R are required to clarify the factor-structure, however, this would only seem useful once the RTE has been further developed.

Further investigation into influences on research in the workplace is needed. Qualitative research would appear best suited to this task, possibly with the aim of developing components for a parallel quantitative measure of the work environment. Common elements from each environment may then emerge, presenting pathways for increasing research activity.

Training/Practice Implications

This study suggests that targeting the components relating to the expectations factor (positive reinforcement, flawed research, varied styles) in the RTE will have the strongest impact on research intention post-qualification. Training courses could use this information to tailor their research components. Supervision also seemed to be a crucial factor in influencing research attitudes. Supervisors of clinical placements tend to receive standardised training to ensure quality; a similar practice might be employed with research supervisors. Training on aspects such as tendering grants, getting published and getting through ethics also seemed to be desirable and could be further incorporated.

In the workplace, cultivating links with universities, creating research networks and team-working would seem to be key areas for development. However, lack of time was by far the biggest barrier, and consideration needs to be given to integrating the scientist-practitioner model. A more structured approach to identifying projects for trainee research and acting as research supervisors may be a way forward here.

Limitations

Retrospective ratings of the RTE were used in conjunction with current ratings of other variables. The validity of retrospective ratings can be confounded by memory and bias, particularly when participants had been qualified for a mean of nine years. Intention was used as the main outcome as opposed to actual research activity, and although investigation has shown strong correlations between the two (Cooke & Sheeran, 2004), previous research has tended to focus on simple, health-related behaviours, as opposed to research activity which is a complex behaviour influenced by numerous external circumstances. A psychologist may have every intention of conducting some research but if there is no funding available, for example, then it may not be possible. Actual behaviour may have been more valid, though operationalising this too is not without its problems and it is questionable whether the common approach of using journal publications to assess research activity is effective at capturing the clinical psychologist's full range of skilled research activities. Mallinckrodt and Gelso's (2002) prospective design may have resulted in higher validity.

The study design was also correlational, meaning that causation could not be implied. A group comparison design would lead to stronger inferences, though would be difficult to engineer for this research activity.

The thematic analysis was also conducted from the perspective of a single trainee and more diverse themes may have developed if a combination of psychologists from practice and academic contexts had analysed the data. Finally, the order of presentation of the measures was not counterbalanced and data were only received from those who chose to respond.

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Section C

Critical Appraisal

Word Count: 1942

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What research skills have you learned and what research abilities have you developed from undertaking this project and what do you think you need to learn further?

I feel I have gained a greater understanding of multiple regression approaches, particularly logistic regression, which I had not encountered prior to undertaking this project. This was a particularly valuable opportunity to revisit some of my MSc teaching on statistics, particularly a session on mediation analysis which proved invaluable in aiding my analyses and making the approach accessible. However, I had to learn about the use of mediation with continuous predictor/mediator variables and a dichotomous outcome variable independently, mostly through some helpful internet sites, as this cannot be carried out in the usual way due to correlation coefficients being produced in different scales. This process exposed me to some of the more current debates on approaches to testing mediating relationships, and I was interested to learn more about these methods. For example a procedure known as "bootstrapping" is a more recent approach to mediation, though one that is not easy to execute and which SPSS is not currently able to do without special syntax. I would like to learn more about this and other methods and envisage that I will do so in preparation for publication.

I also used this project as an opportunity to learn how to use Nvivo software to aid qualitative analysis. I had not used this programme before and taught myself how to do so with the use of online guides, video tutorials and the "help" facility. I was very impressed with what this package could do and the level of thought that had gone into developing the available functions. I have used thematic analysis previously without the aid of Nvivo, and found it very tedious and time consuming. Nvivo made this process infinitely easier to conduct. I also believe that more thorough analyses are possible with it because of the level of

manipulation possible over the data and the ability to easily recode and alter data and themes. For example, being able to look at the data coded under one theme and see what other themes each extract has also been coded under was very helpful in the reviewing stages of the analysis. I am eager to continue developing skills with Nvivo, particularly as an aid to learning more about qualitative approaches I am less familiar with such as grounded theory. Given this interest, I feel disheartened about the results of my study, which suggest a lack of opportunity to conduct research and a subsequent deterioration of research skills, and hope that I may find a role which is an exception to the rule.

This was also the first time I have used a mixed methodology approach, which I found both enlightening and a challenge. I thought that the thematic analysis might be easier as I already had a model and themes to start with, so it appeared to be a simple case of assessing if the data could fit the themes. On the contrary, I found this more difficult than bottom-up thematic analysis where the codes and themes develop organically and in a relatively coherent manner. With the top-down approach I used here, analysis was a constant process of checking back and forth to see if an extract fits with what I had understood a pre-existing theme, defined in another context, to encompass. I do believe that integration between methodologies is the way forward however, and I am glad to have had this experience to better equip me for future projects. I have a personal interest in single-case designs, having learnt a great deal about the approach for my initial project, and this is another method in which qualitative and quantitative data can be triangulated. I have always found single-case designs appealing because of this factor but also because of how well they can mesh with actual clinical practice. I have therefore always endeavoured to employ this approach in my own practice once qualified and I feel the current project has given me further motivation and ideas for how I might attempt to achieve this goal, e.g. with the assistance of a research

network or as a project for a trainee. Interestingly, this fits very much with recommendations from Corrie and Callanan (2001) and Haynes, Lemsky and Sexton-Radek (1987), who both concluded that greater knowledge of broader methodologies more amenable to clinical contexts, particularly single-case design, would be likely to lead to an increase in research activity.

If you were able to do this project again, what would you do differently and why?

If I were to conduct this project again the main thing I would do differently is to collect some additional qualitative data. I did not have as much time to conduct this project as I would have liked, which was due to only starting it at the beginning of third year after my original project on a different topic collapsed. I did attempt to run a focus group with clinical psychologists but this was unsuccessful due to a total lack of willing participants and insufficient time for a second attempt. Ironically, this experience itself reflects my findings of clinical psychologists having no time for research/not seeing it as part of the role. However, I wanted to conduct a focus group to obtain further qualitative data on and expand upon and explore the existing comments collected by Eke, Holttum and Hayward (in submission), as I suspect more information would be volunteered in conversation than was provided in written format. This may have allowed the use of grounded theory, as the model derived from the existing comments could have been tested and expanded upon with addition data, which may have given more validity to the findings and exposed issues yet to be considered.

I think it may also have proved interesting to have conducted a comparison between trainees in the final year of training and qualified psychologists several years out of training, using the

same variables. My study has demonstrated that different barriers and facilitators are found in each context and it may have been interesting to use a group comparison design to explore this further.

Although not directly related to this study, having had the experience of my initial project fall apart, if I were to complete the MRP again I would take a different approach to the process of finding a project. There was considerable pressure and competition to find a supervisor in the first year and I although the supervisor I initially chose had some interesting ideas, there was not sufficient time to explore the practicalities of these. The supervisor was not very experienced in research and problems escalated to the point that I decided to abandon the project with enough time to complete another. If I were to repeat this process, I would be much more conscientious about finding a supervisor with a good working knowledge of the relevant research methodology, the MRP process and a more developed idea of the research project.

Clinically, as a consequence of doing this study, would you do anything differently and why?

My study did not have a clinical focus, however, through the process of conducting it I have reflected greatly on the role I would like research to take in my career. Judging by the results of this study, it seems likely that opportunities for conducting research in standard NHS clinical settings will be few and far between, and that to be involved in research I will need to seek posts where this is a specified aspect of the job, most likely within university settings. However, my results suggested that having a supportive network of research oriented colleagues, conducting research in partnership with others and having access to good

quality supervision and support form academic institutions are strong facilitators of research in clinical settings. I shall therefore attempt to establish these factors in my future roles and try to stay mindful of these aspects when obtaining employment. I feel that maintaining links with Salomons or forging links with other academic institutes is of particular importance, and I am keen to learn more about opportunities for maintaining contact, such as acting as a research supervisor. I was particularly pleased to find out that it will still be possible to remain a member of the library beyond graduation, as I feel that having access to relevant literature and databases is the foundation to constructing any research project.

My findings have also led me to consider initiating a research network within my year group, which could be used as a source of support for hopeful researchers beyond training, but may also provide opportunities for joint learning and dissemination of findings and skills. I see research as a real means to establishing alternative interventions such as community group projects, and this can become much more achievable by working with a team. Prior to analysing the qualitative comments, I had also raised the point in a year group discussion that training did not equip us with skills for obtaining research grants or expose us to this process. The comments in my study confirm that this is one barrier to conducting research later on, and so gaining experience in tendering for funding is something I shall try to prioritise.

If you were to undertake further research in this area what would that research project seek to answer and how would you go about doing it?

I think the biggest priority following on from my project is to conduct a more in depth analysis of research activity in the workplace, to really gain a thorough understanding of how research does or does not get done. I envisage this being achieved via qualitative analysis

and in particular grounded theory, but through the use of interviews or focus groups rather than written open ended questionnaires. A more targeted approach might be taken too, specifically looking at different settings and in different regions (rural vs urban, near a university vs. far from a university), as it seems plausible that research activity may vary as a function of these. The themes elicited from this study and my study could then be developed into the basis of a quantitative measure of the practice context, similar to the Research Training Environment Scale (Gelso, Mallinckrodt & Judge, 1996), used to assess how research-friendly the training environment is. This of course would open up space for quantitative methodologies to further investigate the practice context, as well as looking at links between the practice context and the Research Training Environment to better understand how views of research and research activity evolves with career progression. Longitudinal approaches similar to Mallinckrodt and Gelso's (2002) would be ideal here, but group comparisons would be appropriate too.

I also feel that the RTE needs to be further revisited and assessed in a similar way, as this was based on the speculations of one individual (Gelso, 1979, 1993) rather than the experiences of those located in it. My study, along with others (Hollingsworth and Fassinger, 2002; Kahn & Schlosser, 2010) has suggested that more attention needs to be paid to the role of supervisors and perhaps more importantly, developing practice-relevant research skills, that enable research activity to continue beyond training. Qualitative methodologies would again seem appropriate for this task, preferably with trainees towards the end of training (ideally at the point of completion) who have experienced the RTE in its entirety. Alternatively, the same analysis could be conducted with trainees at different points in training to compare how perceptions of the RTE alter throughout training. Again, a longitudinal approach over the three year course would be ideal here.

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Section D

Appendices

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Appendix 1

Literature Search Strategy

The databases "Psychinfo", "Medline", "Web of Knowledge" and "Google Scholar" were searched using the following terms; "research activity", "research productivity" "research training environment" "publication". All terms were exploded to include variations, and references of relevant studies were further searched. A total of 190 studies were returned. Abstracts were reviewed using the following criteria:

Inclusion Criteria:

- Empirical, theoretical or anecdotal study examining influences on research activity.
- Qualitative or quantitative design or accounts of personal experience.
- Participants from clinical/counselling psychology disciplines.
- Participants primarily based in or training to work in health care settings.
- Outcome measure or clear definition of research activity.

Exclusion Criteria:

- Focus on psychologists from other disciplines, e.g. academia.

Where the above criteria could not be ascertained from the abstract, studies were obtained and the full article was assessed using the same criteria. This resulted in a pool of 31 relevant studies that were reviewed.

Appendix 2

Definitions of the Research Training Environment Components, Taken from Gelso Mallinckrodt & Judge (1996)

1. **Faculty modelling appropriate scientific behaviour (faculty modelling).**
   Faculty are involved in research and show enjoyment for the process; they enjoy discussing ideas and invite students to be responsible collaborators.

2. **Positive reinforcement of scientific activity (positive reinforcement).**
   Faculty and training program offer the student encouragement, support, and formal as well as informal rewards for research activities and accomplishments of students.

3. **Early, non-threatening involvement in research (early involvement).**
   Students are encouraged to become involved in research very early in training and in a way that fits their level of expertise; research experiences are organised in a way that is interesting rather than anxiety provoking.

4. **Separating out research from statistics (separating statistics).**
   Statistics instruction is sensitive to students' needs and relevant to applied research; the training programme emphasises the logic of research design, not just statistical analysis.

5. **Teaching students to look inwards for research ideas (looking inward).**
   Students are encouraged to find their own research ideas and study what is meaningful to them, rather than what faculty are interested in.

6. **Teaching science as a social experience (research as social).**
   The training programme shows how research can be a social-interpersonal experience in part, as well as a solitary experience; meaningful research team experiences and sound adviser-advisee relationships are provided.

7. **Teaching that all research is flawed (flawed research).**
   Faculty appreciated that all studies inevitably have their problems and do not put pressure on students to do perfect research; single studies do not have to be great to be worthwhile; beginnings of programmatic research are encouraged.

8. **Teaching varied investigative styles (varied styles).**
   A wide range of approaches to research are taught, practiced and valued; no one approach is seen as the right way.

9. **Wedding of research and clinical practice (research-practice links).**
   Training shows how research is relevant to practice; faculty are seen as the doing clinically relevant research; counselling experiences are a valued source of research ideas.

10. **Focusing on how research is conducted in the workplace. (Taken from Gelso, 1979)**
    Training pays attention to nuances of conducting research in a work setting, including the crucial importance of protecting research time against innumerable service demands, and the politics of conducting research in the workplace.

Appendix 3

Summary of Findings from Reviewed Studies

Study & Sample	Independent Variable(s)	Dependent Variable(s)	Findings	Limitations
Galassi et al. (1986) 38 Programme directors	Survey completed by course directors on RTE	Productivity (No. papers presented/published	↑productivity associated with early involvement and varied styles	Poor analyses. No standardised measure of RTE
Royalty et al. (1986) 358 counselling psychology students	RTES	Retrospective and current research attitudes	↑attitudes from entry to current. Greatest increase associated with faculty modelling, positive reinforcement, early involvement, flawed research & research-practice links.	Retrospective attitudes, no link to productivity, ppts mostly in early stages of training, used students still in RTE.
Mallinckrodt et al. (1990) (used same data as Royalty et al.)	RTES Personality	Retrospect and current research attitudes	Investigative & investigative-artistic personality associated with ↑ retrospective and current attitudes. ↑attitudes (change) associated with flawed research and research practice links. Variance in attitude: RTE= 4% Personality = 10% Retrospective attitudes = 34%	As above.
Krebs et al. (1990) 260 counselling psychology students	RTES Personality	Productivity (self-reported no. of published research & theoretical papers)	↑productivity associated investigative personality with faculty modelling, early involvement, research as social, flawed research & research practice links. -ve correlation between social personality and productivity. Variance in productivity: RTE= 4% Investigative= 2% RTE*investigative= 1.8% RTE only impacts on investigative students	Retrospective RTE. Sample not all counselling Ψ
Mallinckrodt & Gelso (2002) 15 yr follow-up to Royalty	RTES-R Personality Attitudes	Productivity (lit. Search using names of ppts over 15-year period)	↑productivity associated with investigative personality, faculty modelling, research as social and separating statistics.	Single database, loss of ppts.

et al. 1986			Variance in productivity: Attitudes= 2% RTE= 7% Personality= 3%	
Phillips & Russell (1994) 125 counselling psychology students	RTES SERM (self-efficacy)	Productivity (points assigned for different research activities)	+ve correlations between: RTE & Self-efficacy Self efficacy & Productivity. Self-efficacy predicted productivity, RTE did not.	Flawed measure of productivity, student sample
Gelso, Mallinckrodt & Judge (1996) 173 applied psychology students	RTES-R SERM SPI (interest in roles)	Attitudes	All RTE components correlated with self-efficacy & attitude change. RTE did not correlate with practitioner roles. Flawed research & looking inward only components to correlate with scientist roles. Sig. Higher scoring RTEs at high impact programmes on all components.	Limited analyses, student sample, retrospective attitudes
Kahn & Scott (1997) 267 counselling psychology students	RTES-R SERM Personality Attitudes	Productivity (12-item measure)	Self-efficacy predicted by RTE Attitudes predicted by RTE, investigative personality & self-efficacy. Productivity predicted by attitudes only	Error terms fixed to 0.
Bishop & Bieschke (1998) 184 counselling psychology students	RTES-R Personality RSES (Research self-efficacy scale) ROEQ (Research outcome expectations questionnaire)	IIRQ (Interest in research questionnaire)	Self-efficacy predicted by investigative personality, RTE & year in programme. Outcome expectations predicted by investigative personality, RTE & self-efficacy. Research -ve predicted by artistic interests, & +ve predicted by investigative interests, self-efficacy & outcome expectations.	Used total RTE not separate components.
Hollingsworth and Fassinger (2002) 194 counselling psychology students	Shortened RTES-R SERM Research Mentoring Experiences Scale Attitudes	Productivity (12-item measure)	Mentoring & self-efficacy mediated RTE-Productivity relationship. Variance in productivity: Attitudes = 10% Mentoring & self-efficacy also sig.	Should mentoring be separated from RTE?
Kahn & Schlosser (2010) 40 clinical/	**Students** SERM Productivity (12-item measure) Advisory Working	Student level RTES-R Programme level RTESR	**Programme RTE** Research Interest = 26% Advisory Alliance = 81% Faculty RTES-R =39% Faculty-Student	

counselling/ school psychology programmes 197 students 81 faculty members	Alliance Inventory **Faculty** RTES-R Job Satisfaction Scale Faculty Work-Life Survey Faculty Publications		relationships = 36%	
Deemer et al. (2009) 217 counselling psychology students	RTES-R Research Outcome Expectations Mastery Approach Goals	Research Interests	RTE-Research Interest relationship fully mediated by Research Outcome Expectations and Mastery Approach Goals.	Variables entered into SEM as observed variables
Eke et al. (in submission) 374 qualified clinical psychologists	Shortened RTES-R SERM ROEQ Subject norms measure Control beliefs measure	Intention to do research	TPB components mediated RTE-intentions relationship. Self efficacy did not. Attitudes strongest predictor.	Only used total RTE score.

Appendix 5. Questionnaire Pack

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Appendix 5

Approval Letters

Ethical approval letter for Eke et al's. study

Letter from Dr Gemma Eke granting permission for the use of her data

Ethical approval for the current study

These have been removed from the electronic copy

Appendix 6

Relevant Personal Experiences that may Influence the Researcher

The following are pieces of information that I felt were relevant to the analysis.

- I completed a MSc in research methods in psychology prior to training. Whilst I felt the level of research training on this course was particularly advanced and has equipped me well in my career, I also found this experience very isolating and stressful; trying to balance academic demands with the empirical dissertation, part-time work and relationship commitments was difficult at the best of times.
- I do not have any of my own publications and have never felt supported in pursuing publication.
- I found the process of identifying a research project on doctoral training quite rushed and stressful and did not feel there was support to reflect on and develop my own ideas, in fact quite the opposite.
- Despite this, I pursued an external supervisor's idea, who was inexperienced in research, and developed a project. Part of this involved passing through the NHS ethics process, which though I found somewhat tedious, my project was accepted with very minor amendments.
- Recruitment then became particularly difficult, and as a result, this project became unfeasible. This was quite a mixed experience, causing considerable distress, but one I felt supported through. I then selected the current project as a substitute. I therefore have had a difficult experience of conducting research in the RTE, which I am very mindful of.
- I am still a trainee and have yet to experience conducting/attempting to conduct research in the workplace as a qualified clinician.
- I regularly see other trainees, who also talk about their difficult experiences in conducting their research projects.

Appendix 7

Description of Thematic Analysis

The six phases of thematic analysis adapted from Braun and Clarke (2006) were applied to the qualitative comments in the following manner:

Phase 1: Familiarisation with the Data

The handwritten comments were typed up by the researcher for further analysis and to provide a sense of global understanding. At the same time, the researcher noted down anything that seemed significant or of interest to begin thinking where comments might fit in Holttum and Goble's model as well as potential codes for comments that didn't fit. This included the following observations:

- Funding
- Career progression vs. research
- Understanding research is valued; doing it is not.
- Research not supported by management
- Skills deteriorate
- No time for research
- No contact with research colleagues
- Clinical demands
- Positive relationships/links to university
- Supportive team
- Non-psychology colleagues view research negatively
- Understaffing increases workload
- No time
- Getting published is very difficult – puts people off? No support/training on getting published
- Supportive head makes a difference
- Over-researched clients/presence of large projects deters further projects
- Shouldn't have to be scientist-practitioners; should be allowed to chose one or the other.
- Feelings of incompetence deter people.
- Research takes over your life, affects your well being.
- Don't have enough power – need power be allowed to do research.
- RTE reduced confidence.
- Need good supervision/mentors/role models.
- NHS policies a deterrent.
- Clinical work more important.
- Support from team/department a strong motivator.
- Training didn't develop confidence.
- No resources to do research.
- Support for academic professionals would help.
- Research not counted in clinical activity monitoring, only patient contacts.
- Post-qualification research experience a positive influence.
- RTE a negative influence.
- Expectation from managers that research will not affect clinical contact and will be done in own time.

- Research a luxury.
- Lack of research activity results in low confidence, feeling "rusty".
- NHS positive on the face of things, but not when it comes to actually doing it.
- Working in partnership with others promotes research
- Ethics a deterrent.
- Use skills to do audits.
- Research should be encouraged and integral to our role.
- No time to prepare work for submission/make changes.
- Use skills to supervise students/trainees.
- Poor supervision on training a deterrent.
- In private practice research does not generate income.
- Publishing too time consuming.
- Team working is effective, impossible to do research on your own.
- Training does not teach team working.
- Research leads onto research – gets easier.
- PhD prior to training helped – greater influence than training.
- Ethical approval process a barrier.
- Staff shortages a problem.
- Trainees can be used effectively as a means for conducting research.
- Lack training on applying for grants.
- No access to electronic journals.
- Evidenced-based practice does not mean practice-based evidence.
- Negative experience of research during training puts people off.
- Managers don't value research.
- Ethics and R&D take too long to justify the research.
- Not paid to do research.
- Research does not boost career.
- BPS/training values research; NHS doesn't.
- Critical review skills important.
- Ethics procedures time consuming and bureaucratic.
- Team working helps.
- Lack of support in doctorate deters further research.
- Supervision not consistent in training.
- Part-time working leaves no time for research.
- Team working preferable.
- Need protected research time.
- Use skills for audit/service evaluation.
- Clinical demands take priority
- Too out of date to implement research.
- Waiting lists and caseload too great.
- Access to statisticians would help.
- Commissioners interested in waiting time targets and service delivery, not research.
- Don't need research for career to progress.
- PhD prior to training built confidence and increased research activity post training.
- Research must fit with Trust business strategy.
- Research post prior to training opened doors to further research after.
- Links to training courses would help.

- Responsibility of a new baby deters research.
- Lack of personal responsibility frees up time for research – easier when younger.
- Managerial responsibilities outweigh research.
- Research not valued in clinical teams.
- Work pressure prevented publication.
- Completing research by supervising trainee projects is one solution.
- Demands of research cannot be met without some sacrifice to family life.
- Managers not interested.
- Confidence decreases over time without use of skills.
- Negative NHS ethics and R&D experiences damage confidence and desire to do research.
- Prior research experience to training improved confidence and ability and increased subsequent research activity.
- Supervising students increases research output.
- Having a colleague to talk to about research was helpful.
- Having access to a university was helpful.
- No funding for research.
- Ethics process time-consuming.
- Use skills to develop service evaluations for other teams.
- Lack financial support.
- Research active clinical supervisor provides motivation.
- Research role promoted in training not viable in practice.
- Less time for research in higher grade posts.
- Men typically do research.
- Easier to do research without children.
- Research impossible with a young baby.
- Poor research supervision during training left a jaundiced view of research.
- Training courses weak with respect to research.
- Stress of having to complete a thesis independently deters later research activity.
- Research during training needs to better reflect real world opportunities.
- No research role models in the NHS.
- Most important influences on research transpired post-training.
- Research has be an actual part of the job, not just in the job description.
- NHS will not allow psychologists to routinely be involved in research.
- Have had to do research in my own time.
- Clinical training provided very limited skills, had to seek additional training in order to gain the skills and confidence to do research.
- Most comments seem to talk about barriers, less mention of facilitators to research.

Phase 2: Generating Initial Codes

This list of ideas was then reviewed to start identifying a set of codes. The data were then reviewed using these codes, and more codes were added or removed as seemed appropriate. This resulted in the following set of codes:

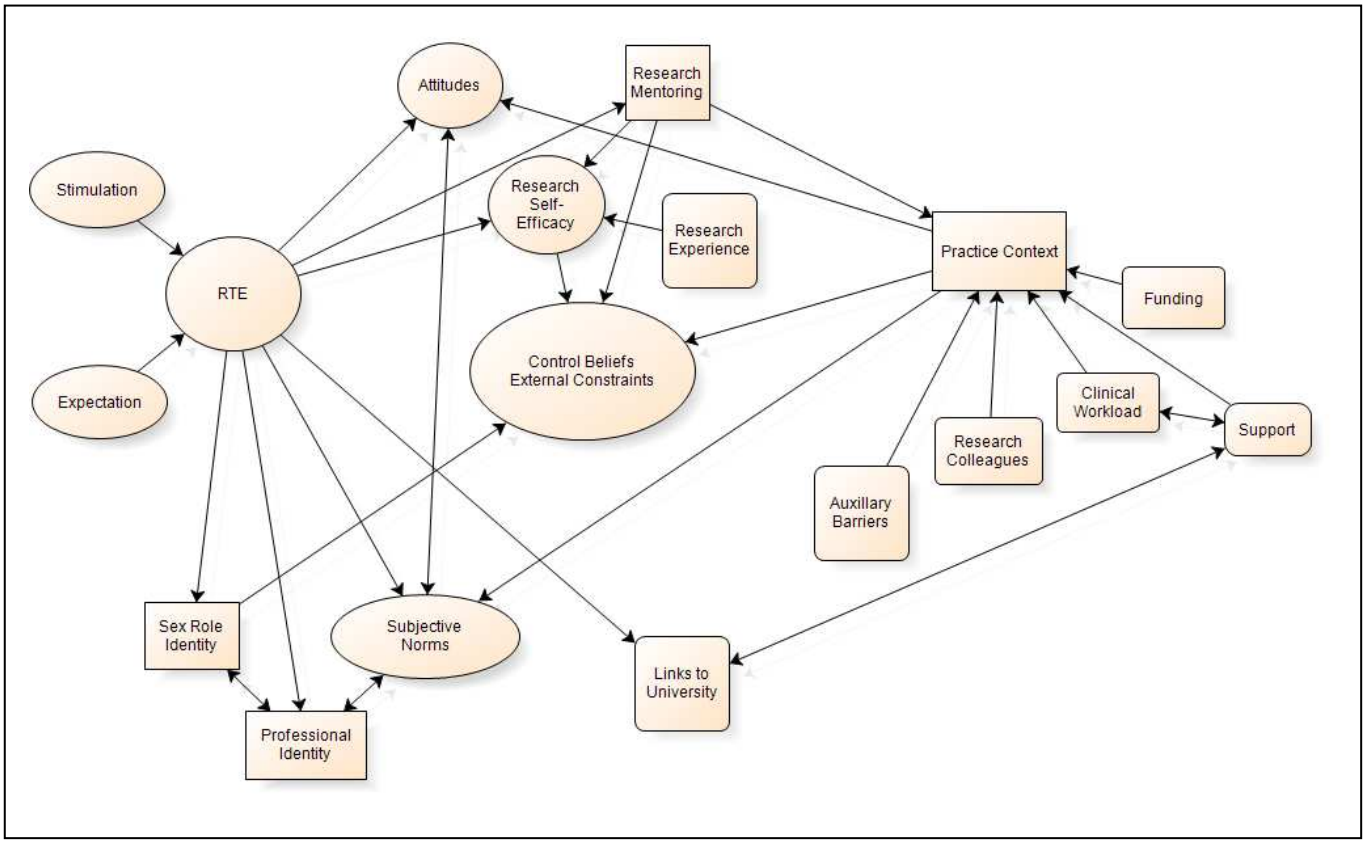
- Funding an issue.
- Managers don't support research.
- Skills deteriorate without use.

- Confidence deteriorates through lack of research activity.
- No time for research.
- Clinical demands take priority.
- Links with university support research.
- Other professionals view research negatively
- Having contact with other research-minded colleagues helps.
- Low staffing further reduces time.
- Difficult to get published.
- Is research part of the role?
- Research impacts on personal life.
- Power imbalances prevent research.
- Supervisors have a mixed effect.
- RTE can have mixed impact on confidence.
- Research experience after training had a positive effect.
- Team working promotes research.
- NHS ethics and R&D approval are strong deterrents.
- Skills can be used for audit/service evaluation.
- RTE doesn't teach skills for conducting research at work.
- Prior research to training makes training and doing research at work easier.
- Can use skills to supervise research trainees.
- Lack of access to journals prevents research.
- Research promoted by training, deterred by work/NHS.
- Critical review skills important.
- Working part-time reduces time for research.
- Having a family leaves less time and space for research.
- Being younger makes research easier.
- Being more senior leaves less time for research.
- Active research role-models promote research.
- Having children makes research harder.
- Research experience after training boosts later research activity.

Phase 3: Reviewing Existing Themes and Searching for Emergent Themes

The codes were then examined with respect to Holttum and Goble's (2006) model to see where they might fit into existing themes or where they might fit together to form a new theme. Themes where no codes appeared to fit were discarded from the model. This process resulted in an intial thematic map shown below in figure 1. Ovals represent themes tested in the quantitative analyses from Holttum and Goble's model; square-edged boxes represent other themes from Holttum and Goble's model; round-edged boxes represent emergent themes.

Figure 1 Initial Thematic Map



Phase 4: Reviewing all Themes

Once the codes had been sorted into themes and into a map, the extracts making up each code within each theme were re-read to check that they fitted with that theme. This whole process was repeated several times, with each iteration leading to a deeper understanding of the data an adding clarity to the themes. Figures 2 to 4 below show the resultant thematic maps from each revision.

Figure 2. Second Thematic Map

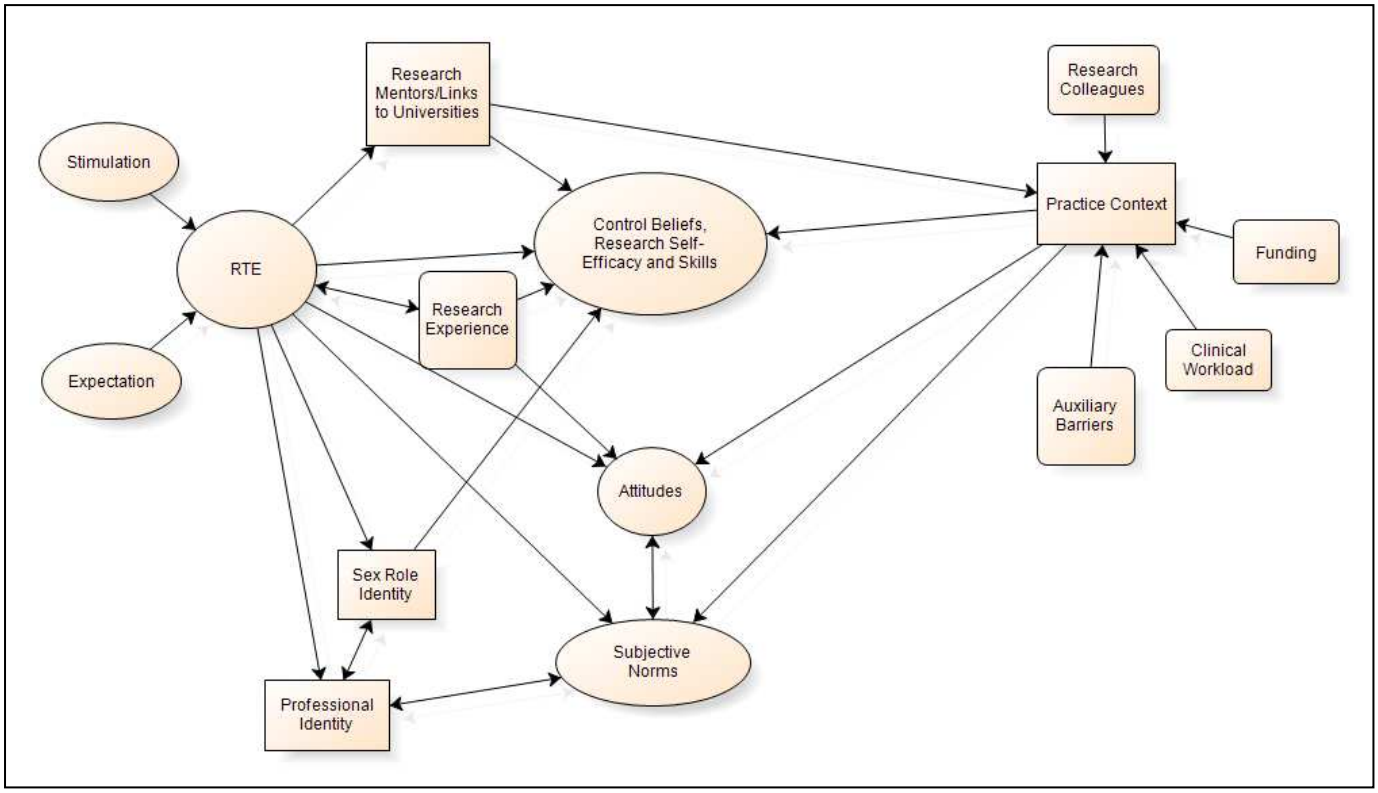


Figure 3. Third Thematic Map

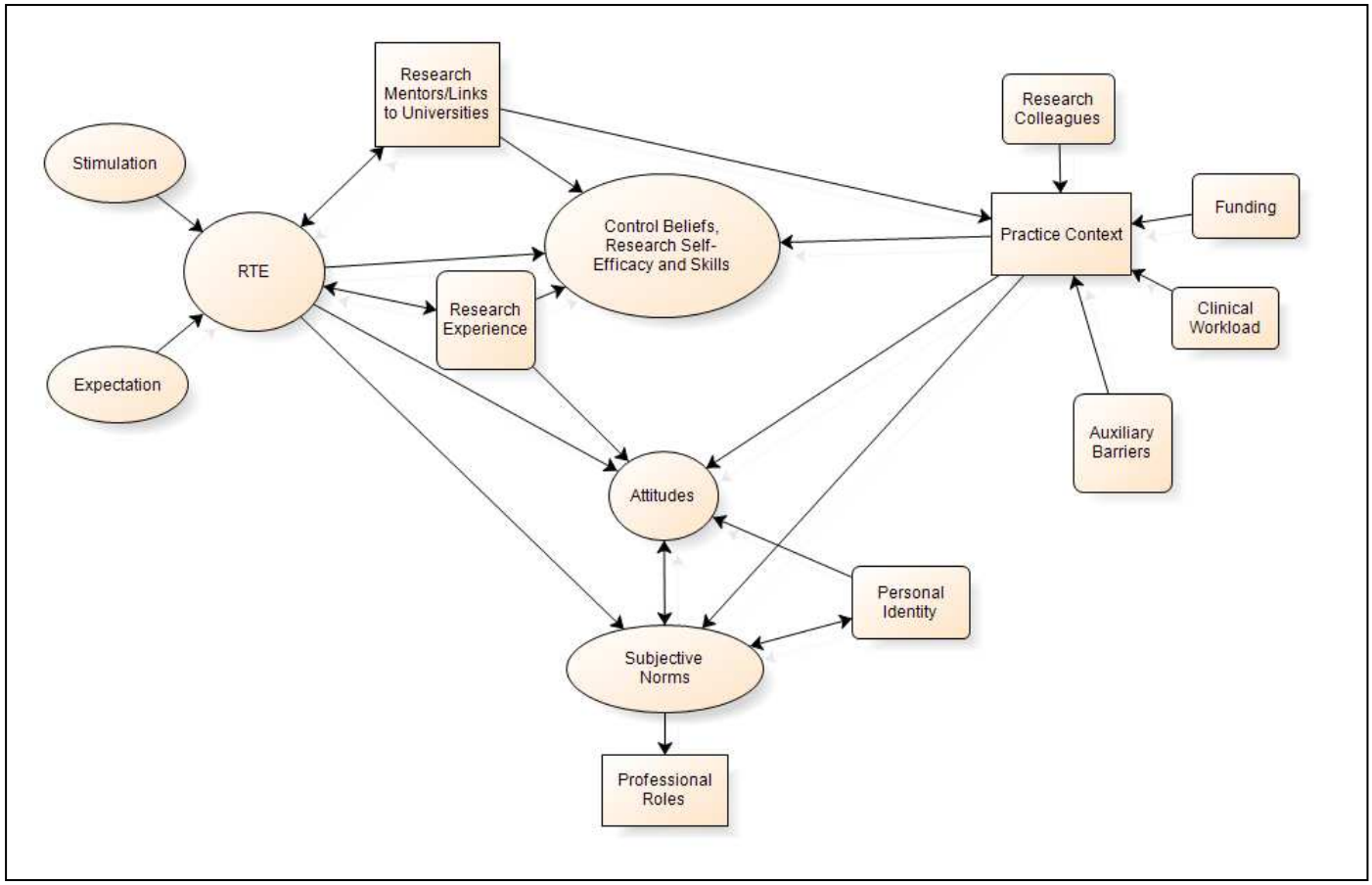
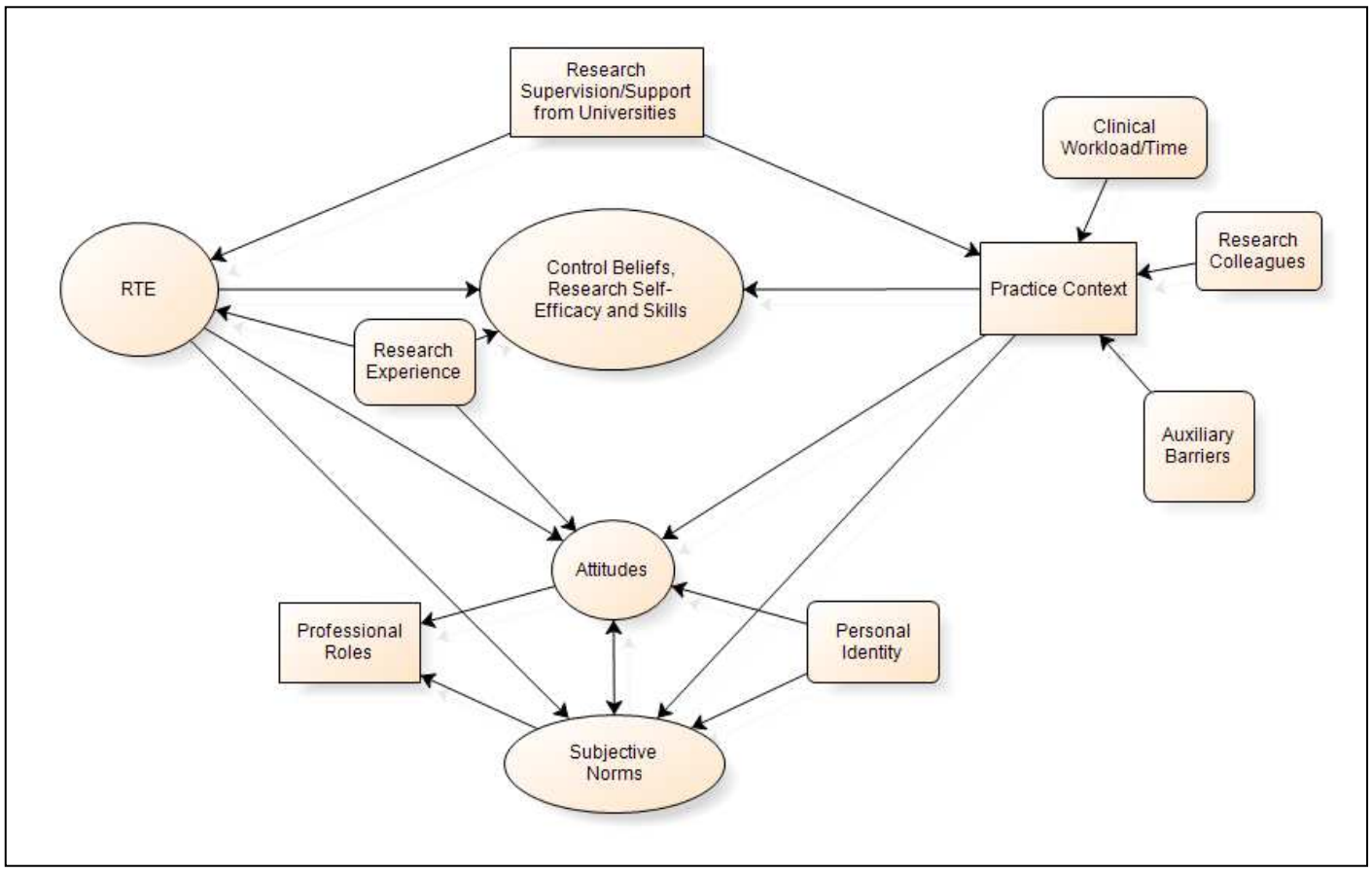


Figure 4. Final Thematic Map



Phase 5: Defining and Naming Themes

The observant reader will have noticed that the names of some of the themes evolved with each revision shown above and this reflected the changing content of the themes. The final list of names are those shown in **figure _ above**

Phase 6: Producing the Report

This phase need not be discussed here, since this document is the resultant report from the analysis.

Appendix 8

Additional Examples of Extracts for Each Theme.

Practice Context

Whilst clinical training places an emphasis on developing competencies in research – the actual practice of clinical psychology expects a psychologist not to undertake research. Research is an "extra". However, having skills in analysis of data and being curious/critical is much valued by colleagues.

Many managers may prefer to "commission" research from research practitioners or academics rather than allow or encourage clinical psychologists to undertake research within their role.

Opportunity to change/refresh research skills or to have time to do research seems non-existent in current post and management structure. Suspect I'm not alone amongst my peers in this respect.

You're questions were hard to complete because I am a research clinical psychologist employed by a University and therefore have to do research as part of my job (and want to as this is why I do the job). I continue to practice on a small scale but the question about taking time away from my clinical duties does not apply. In fact my line manager sees clinical work as taking time away from research!!

...as a band 7 I do not have sufficient power to shape my role

I think it has always been difficult for clin psychs to do research and you'll be aware of articles in the BPS house journal about this since the 1970's.

We are often "told" by our profession (BPS, training courses) that psychologists "should" do research, but I am not sure what the NHS wants. I think the NHS wants us to get through waiting lists.
Being able to critically appraise a piece of research is perhaps as important or more important than being actively involved in research.

My answers would have been different if I still worked full-time and if I still did NHS sessions.

Prior to clinical training I completed a PhD and I believe that this grounding in research gave me the confidence to tackle the research element of training with minimal anxiety, and that this directly contributed to me seeking a post where I know that research was actively promoted and encouraged

For working CPs, research activity needs to work with the trust (esp FT) business strategy – a benign cycle of research, benefitting the service, generating income and facilitating more research is potentially available.

Research aspects to a "clinical" post is contentious in NHS, our largest employer. My initial thoughts are that too many "important factors" have been overlooked to make sense of this data.....

e.g. – the nature of post working in may or may not have a research component.
- People may have split posts.

Also have concerns about clinical psychology (and other) research being limited to provider trust priorities.

Research and the opportunity to engage in it with interested and interesting others depends upon, it seems to me, the area in which you happen to find yourself located. The career-minded ensure they find jobs where research can occur, does occur, and those don't plan their career in such fashion, like me, end up in deserts of research.

The role of Heads of Departments now must be to push the research importance with senior managers to provide balanced appointments.

Also useful for NHS contracts to allocate 1 day per week to research with requirement of x number of publications (in journals not just internal publications) per year.

I have a split post; university training programme + NHS. Even in the university it is time pressure that gets in the way of research. All of my research output has been through supervising doctoral and PhD students.

Seen as a luxury and not helped by our academic dept researching the obvious.

Clinical Workload/Time

However, although I have carried out small research projects such as; service evaluations, staff audits etc, since qualifying I have not participated in any larger projects. I feel this has been mainly due to the pressures of clinical workload

Completing this questionnaire has helped me to consider the role of research in my current job. It is surprising how quickly research is off the agenda when you get caught up in daily clinical demands of a job.

Having a demanding clinical caseload makes time for research really difficult. I believe my non-psychological colleagues would have a negative view of me if I were to put research before client contact. This includes my team manager.

I am currently in a post that is understaffed and so clinical work takes priority. I hope to be joined by another psychologist this year so may have time for research...

problem is finding time with competing commitments.

I have managed to negotiate ten study days from my line manager to draft and make changes for my article, however, this is not enough time.

I think that research is very difficult to achieve and not well respected when you are in a community team where you are the sole psychologist and have a very large caseload. More support and time is needed. Our trust is now a foundation trust and the most important thing is the number of clients that you see – research is not high on the agenda.

I will need to be in a post that gives me time and resources to do that research, if I can find one!

The main issue now is time alongside clinical practice

I think working in the NHS means clinical work and the pressure of waiting lists and number of patients you have to see a week means it is very difficult to make time for research as it's not a priority for managers. Managers see clinical work as more important.

Time – always very very busy with clinical work.

Resources/Support – team chronically under-resourced.
I would really like to be given time and a mentor (? From an academic institution) to develop research in my workplace/clinical setting.

Commissioners and service managers are counting number of patient contacts, and do not take into account other activities (e.g. research, admin). Therefore my priority has to be patient contact, with research largely done in my own time.

Even though my line manager and supervisor support the idea of me doing research I would have to do most of this type of work in my own time.

I think that the current climate in the NHS of achieving targets such as reducing waiting lists together with reduced resources for clinical services means that research is now a luxury, which cannot be afforded by most clinical practitioners.

My experience of posts within the NHS is that whilst people are generally positive about the idea of/concept of research, unless it is actively written into your job description, with time put into your job plan, it is not possible to justify doing it (as hours have to be accounted for in terms of numbers of clients seen). Even when it is written into your job plan there is an expectation that you will get research done with no impact on the amount of clinical work you also fit in!

I am working as a clinical psychologist on a CBT research trial which gives ample research opportunity/is part of the job.
Compared to the NHS – my last role - being 'officially' on a research trial has a huge impact on my answers in terms of opportunity to do/fit research to clinical job.

I would do research if I had allocated time within my post to do so. Currently due to clinical pressure, I am unable to sacrifice clinical work for research.

The enthusiasm associated with research I felt during my training seems to have faded due to the realities of managing a heavy clinical caseload and other constraints of the job. I come across very few clinical psychologists who seem to be able to fit research into their day – audits seem to be the only areas where skills are being utilised.

Ideally, research should be nurtured and encouraged within services – and an integral part of our work.

I have applied to have 2 articles published but needed to make changes. I didn't have enough

time to do this and have never re-submitted. I'm disappointed but see no capacity and time to ever do this now on part-time clinical hours (after maternity leave). My department values clinical over research and I'm influenced by that.

I was in the NHS for 20 years and had no time for research – I am entirely patient focused

The timing of this questionnaire is important to my responses. My job is currently being redefined to include a large focus on research. My previous post did allow space for research time but the clinical pressures were so high that it became difficult to prioritise research. As my job is being redefined I am hoping to be much more involved in research over the next few years than has previously been possible.

The biggest barrier to me doing research in my current job is having the dedicated time for it in the working week

With additional managerial responsibility and ongoing clinical work there is not much time for research.

Main reasons for not doing more are;

- lack of colleagues doing research to help/encourage
- clinical pressures
- not a management priority.

Research is often cited as valued by NHS trusts but infrequently given the time and resources needed. I wonder if this research may contribute to NHS seeing more clearly the use of research in developing "evidence-based" practice – from the front line – not just projects at Unis/institutions which form the basis of NICE guidelines.

I would say that time pressure at work means that involvement in research would be difficult, even though it is something I would like to do.

In addition there may be a relatively new phenomenon which has made it even more difficult – closer scrutiny/micro-management by general managers of amount of clinical work. "You are not employed to do research." So highly motivated research clinicians will move to university posts.

I feel that the current NHS climate/clin psy depts. do not allow the time for clin psys to conduct research. I have no research time allocated in my post and have to follow my research interests in my own time – I feel this is a sad reflection when we allege to be science practitioners!!

Also access to research facilities/electronic journals is scarce in clin psy depts. – hardly encourages/facilitates research!

I feel (along with a number of colleagues) that clin psy is about bums on seats, and evidence based practice is not encouraged – research time along with CPD is unfortunately outdated and frowned upon with the arrival of waiting list initiatives! HELP! Very sad reflection of our profession.

This questionnaire has made me think why I struggle to complete research projects. I have no problem identifying projects but finishing them is an issue. Competing demands on my time is a factor.

The reality is there is too much clinical work to allow for research. I am trying to write up a theoretical paper at the moment and there is just no time!

The NHS makes integrating clinically relevant research almost impossible to pursue – it's almost viewed as less important "easier".

NHS administrators and managers (non-clinical) do not value research and the only statistics they are interested in are the 18 week targets for patient breaches.

As a principal I am very pro research and its importance but feel too "rusty", (lacking in research skills that are up to date) and busy with clinical work to apply these principals to myself.

He who pays the piper calls the tune. The PCTs as purchasers dictate what providers – clinical psychologists in the NHS, may do. They pay us to see patients. We/the organisation are paid per capita – i.e. for each patient seen. Clinical governance time is built in , but also dictated by the multi-disciplinary team within which one is embedded e.g. CAMHS. No matter how fast I discharge cases, there are more to see. – So I run a busy full case load. This is good, and I get paid for it. Posts need to be joint research (academic) and clinical for any worthwhile research to happen.

There comes a time when research has no implications for career, whereas one might think it might early on. – My issue is securing time from organisational matters (management/supervision).

An ethical approach on the part of the researcher is crucial. However, the bureaucracy of 'ethical approval' (what a phrase! Sounds a bit Soviet, don't you think?) really does amount to a hurdle. A colleague of mine does a lot of stats research. All the research involves computer generated data sets, i.e. no real people are involved. Yet he still has to complete ethics forms for each proposal. He's an academic, so he's got the time. I'm a clinician, I've got patients to see!

Research Colleagues

I have not participated in any larger projects. I feel this has been mainly due to the pressures of clinical workload and limited contact with colleagues currently involved in research.

My current clinical team are also ambitious and encourage to some degree my involvement in research.

I hope to be joined by another psychologist this year so may have time for research...

I think that research is very difficult to achieve and not well respected when you are in a community team where you are the sole psychologist and have a very large caseload.

I was fortunate to work in a NHS psychology dept whose head of service was an active and prolific researcher and who encouraged and even provided his staff with dedicated research hours per week. Probably unusual as I am not sure if other departments or services would have had such policies or philosophy. The head of service was also open to any form of psychological research orientation and encouraged diverse research interests.

In my current role research is highly valued and encouraged within the department.

I would be more likely to do research if I was working in partnership with others

Ideally, research should be nurtured and encouraged within services – and an integral part of our work.

I have loads of good ideas for CRTs [research] but I am a lone practitioner.

I am currently lead researcher for a randomised controlled trial in primary care setting. I lead a research team of another clinical psychologist, 2 primary care mental health workers and am recruiting an assistant psychologist to work on the project.

With additional managerial responsibility and ongoing clinical work there is not much time for research. I have found working as a team to be the most effective way of getting the research work done. This is not something I was taught about during training but it would have been useful to have had more training on team working in research and networking as this for me, has broken down some of the barriers to doing research. I'd say it was almost impossible to conduct research in practice on your own, and yet this is the model that clinical training and doctoral research teaches you.

Main reasons for not doing more are;
lack of colleagues doing research to help/encourage
clinical pressures
not a management priority.

I completed a pilot research project last year and have developed the therapeutic model to run a second pilot. We have very few clin psychs here and so I ran the group with a trainee and counsellor (who has since left). I helped to offer placements to trainees and have part of their time to help run and evaluate the group but my trust lead has blocked placements for this year. So staff shortages are one aspect b

I feel that being part of a group might make it much more likely that I would/could get involved in research – both for support in the current NHS climate/focus on waiting lists etc, and for encouragement to keep going.

I would however find it very difficult to undertake any projects alone and would be more likely to try and embed myself in already established teams or collaborate on something with my colleagues.

Nevertheless, there were opportunities to liaise with clinical colleagues – a consultant obstetrician proposed a joint research project on relaxation training and the potential for improvement in fertility in women having problems conceiving. Multi-disciplinary research projects in the NHS therefore would have been possible.

Up until 11 years ago I had very little opportunity to do research as my clinical committals did not allow. 11 years ago, I moved in to a job which was a development post which included service development and evaluation, and more importantly, protected time to do this work. What also helped I think is that this is a job share. My sharee is keen on research and we bounce ideas off each other in a helpful way. Initially, it was extremely useful to have

access to a centre of applied psychology at the university. This helped enormously to get some projects off the ground. Next, my job sharee did the top-up doctorate, which reintroduced statistical analysis and gave us both a reason to get involved in more research. So, I feel two key things were – university support (still is useful) and a good, likeminded colleague.

Auxiliary Barriers

Since qualifying I have found it extremely difficult to publish my dissertation. I feel disappointed that the course emphasises the importance of psychologists publishing their research and yet once qualified there is very little support to help you do this. I have sent my article to three different journals and not been successful.

The client group I work with are currently over-researched with various research projects already underway. This is also the case for staff working within the service. Therefore, further research is discouraged at this time, which can be frustrating as I am unable to follow areas of potential interest to me as a clinican/researcher

The main issue now is time alongside clinical practice and also the maze of NHS policies and procedures in relation to research permissions etc.

I would be more likely to do research if I was working in partnership with others (and if ethics procedures were of less paperwork!).

I have applied to have 2 articles published but needed to make changes. I didn't have enough time to do this and have never re-submitted.

Plus, publishing work is a very time intensive labour of love – and one that few of us are sufficiently trained for.

Current barriers for me in doing research include gaining ethical approval and the number of hoops you need to jump through to get approval from trust and ethics to do a study.

So staff shortages are one aspect but the other is the use of capacity model of waiting lists in community teams which makes random selection very difficult.

Also access to research facilities/electronic journals is scarce in clin psy depts. – hardly encourages/facilitates research!

The other big factor is the ethics approval process. This makes doing research work alongside clinical practice very difficult, as, for small projects closely related to own clinical work, my experience suggests that NHS ethics and Trust R and D ethics processes take as long as doing the research and their paperwork requirements regarding what participants receive undermines recruitment.

RTE

Despite the challenges, I did enjoy the research projects I was involved in during my academic career.

I feel good relationships with members of the course team, who were interested in encouraging my research ideas during training

I feel disappointed that the course emphasises the importance of psychologists publishing their research and yet once qualified there is very little support to help you do this.

I am currently involved in research on a clinical intervention – however I think that my confidence was significantly reduced by undertaking my doctoral thesis. Guidance and supervision were extremely poor and that was not acknowledged when I had to make significant changes following my viva.

I had a poor supervisor for my training research, but hardly saw him. I got excellent support and help from the on-site clinical psychologist who had excellent research skills and was a key person in my development.

My interest in research increased during training. I had enthusiastic, proactive supervisors who encouraged me to publish articles during placements and on completion of training.

My current beliefs about research have been positively influenced by my experience in a part-time, 3 year research post, (post qualification as a clin psych), rather than my training, which gave me a negative perception of research.

The enthusiasm associated with research I felt during my training seems to have faded due to the realities of managing a heavy clinical caseload and other constraints of the job.

I'd say it was almost impossible to conduct research in practice on your own, and yet this is the model that clinical training and doctoral research teaches you.

When I trained in the mid 1980's qualitative research was not taught at all. I taught myself through the 1990's and then learned some more about qualitative methods doing a top-up doctorate in 2003-05. Clinical psychologists should be exposed to the medical-sociology literature as part of their training.

I think the third aspect is my lack of training on how to gain resources to develop the work. I'm aware that people do make links and apply for grants but I feel a bit clueless and not sure where I stand as an NHS employee in getting money!

I believe many psychologists are put off doing research because their research experience during training was a negative one. I've been told by trainees "I just have to produce this thesis and then I never have to worry about this again".

In my view, it is unethical to have undertaken 3 years doctoral training – at great cost to the taxpayer – and then utilise only 2/3 of knowledge and skills obtained.

I undertook my clin psych training in Germany at the University of Liplis . Attitude to research is very sophisticated there and as a result research as part of the training was very in depth. This was invaluable to me. I have not come across a British D.Clin.Psych training programme or an undergraduate course which offers such good quality research training.

I felt completely unsupported and continually criticised during my doctoral research at _____ last year. I have found the experience quite traumatising, and I am aware from

speaking with my peers that several of them feel the same way. The research, for me, was the cherry on the cumulative stress of training. The disparity in access to external supervisors (how do you meet these if you are new to the area/had poor placements in isolated areas? – The competition on the basis of "research fair" days is fierce, leaving many with research in a field not of their choosing). Not to mention the disparity between attitudes amongst internal supervisors.

I have given enough of myself to research, and will not do it again until it is truly part of the job – I am actually paid and recognised for it. I will not keep giving my health, no matter how helpful the results are for the profession!

My experience of supervising/managing junior colleagues is that more recent graduates of training have a much more profound and integrated training in research methods compared to those of us who trained in the dark ages. However, the quality and standard of the research projects i.e. the major dissertation for the DClinPsy has gone down with time. Originality is no longer a fundamental requirement; indeed, trainees and supervisors often expect a ready to go project to be given to them which includes completed ethics! I think this apparent "dumbing down" reflects time pressures.

The questions in the questionnaire are much less applicable to those who completed their training before the introduction of the DClinPsych. The assumptions are based on doing a formal research component which was much less the case when I qualified.

I'm a clinical psychologist working as a research fellow in a university. I'm supervised by an experimental psychologist and a neurologist. My research is focussed on neuropsychological aspects of degenerative disorders. I did my DClinPsych thesis in this area but was actively hindered by the course team who told me that it was inappropriate to be supervised by a non-practising clinical psychologist and no one on the course would help me with the formatting of the thesis. This seemed to be because the course director was threatened by a trainee working with someone external who had several publications.

We had as our main tutor someone who was really fired up by research and had us all enthusiastic.

We are schooled that clinical psychologists have a central role in research but this is very hard to support in clinical practice, despite being in job descriptions.

My clinical training 1976-78 was rather different from current courses. The course was run by 2 full time senior lecturers and a secretary, with additional seminars, lectures etc from NHS psychologists. Both lecturers left for posts in Australia (!) at the end of my first year. Replacement staff arrived at the end of the second year, but there was something of a vacuum, and I did not feel that anyone particularly mentored my research project – hence my series of N/A responses!

I have a strong research background post doctoral training, and felt that research skills/training on the course was directed towards those with little/no research skills. I was largely responsible for my own research projects when on the course and asked for only limited input from supervisors. I have continued to be involved in regular research activity post-qualification.

I do not feel that my early training encouraged me to develop skills in integrating research with other aspects of work as a clinical psychologist.

Research Supervision/Support

I feel good relationships with members of the course team, who were interested in encouraging my research ideas during training, as well as after. Post training they have remained approachable and supportive, and it is partly through my remaining links with the university that I have continued to 'tinker' with research,

I am currently involved in research on a clinical intervention – however I think that my confidence was significantly reduced by undertaking my doctoral thesis. Guidance and supervision were extremely poor and that was not acknowledged when I had to make significant changes following my viva.

I had a poor supervisor for my training research, but hardly saw him. I got excellent support and help from the on-site clinical psychologist who had excellent research skills and was a key person in my development.

I would really like to be given time and a mentor (? From an academic institution) to develop research in my workplace/clinical setting.

I am a consultant clinical psychologist, I have conducted 3 pieces of research to comply with degree needs. I struggle with stats. I have had such appalling supervision at both MSc and D.ClinPsy. I didn't wish to do it (avoidance!!). I supervise others on MSc's and D.ClinPsy often – to help them (but I don't do help with stats).

Section re research supervision –
I found this extremely variable, I picked a very negative experience with one staff member – but I could have picked another staff member and answered very positively.

I worked as a research associate after qualification as a clinical psychologist with an eminent clinical psychologist who was a mentor - he supplied the brains and statistical know-how, enthusiasm and liaised with research funding bodies – myself and other research team members helped with leg work.

Access to statisticians for consultation and to statistical data analysis packages would attract practising clinical psychologists to consider incorporating applied research in their job duties.

I had a difficult experience trying (and failing) to complete a PhD post-qualification:- working in isolation rather than with a research team, insufficient supervision. I have met colleagues who have had dreadful experiences doing top-up doctorates – very poor supervision and inadequate institutional support.

Providing formalised links to training courses in each area would be beneficial (for people who've moved areas). I anticipated being involved in research post training, but moved away from where I trained and have found it difficult to establish links with courses near my new post. Involvement in small scale projects/being a field supervisor etc... feel less daunting than independently running my own project, but are harder to access without course links.

I will continue to supervise D.ClinPsy and MSc students as a field supervisor, which I enjoy and am happy to be involved in smaller projects of which I am not the lead investigator.

I was fortunate to be trained by three strongly research focussed practitioners and at a time when the profession had more freedom!!

Full time university academic clin psychs are not particularly helpful – they are too oriented to their own aims and often just want to control budgets for their own/departmental aims – need more joint clinical/academic appointments.

Initially, it was extremely useful to have access to a centre of applied psychology at the university. This helped enormously to get some projects off the ground.

Research Experiences

To start training with existing research experience in a pure research capacity (i.e. University department) made an enormous difference in terms of your grasp of skills, confidence in yourself and ability to work with the training course staff. I doubt I would be completing any research as a clinical psychologist without this prior immersion in research.

My current beliefs about research have been positively influenced by my experience in a part-time, 3 year research post, (post qualification as a clin psych)

I have found that having done research – leads on to further research opportunities – so it gets easier to do more. Also, you have increased ideas, contact, opportunities and confidence. For me personally, I think having done a PhD research post prior to clin psy training has been most influential rather than clin psy training itself.

I believe many psychologists are put off doing research because their research experience during training was a negative one. I've been told by trainees "I just have to produce this thesis and then I never have to worry about this again".

I worked as a research associate after qualification as a clinical psychologist with an eminent clinical psychologist who was a mentor - he supplied the brains and statistical know-how, enthusiasm and liaised with research funding bodies – myself and other research team members helped with leg work. Subsequently, in the health service I did some research work in clinical health settings on reality orientation with elderly patients.

I had a difficult experience trying (and failing) to complete a PhD post-qualification:- working in isolation rather than with a research team, insufficient supervision. I have met colleagues who have had dreadful experiences doing top-up doctorates – very poor supervision and inadequate institutional support.

Prior to clinical training I completed a PhD and I believe that this grounding in research gave me the confidence to tackle the research element of training with minimal anxiety, and that this directly contributed to me seeking a post where I know that research was actively promoted and encouraged. It is my observation that clinical psychologists who do research post qualification are those who did research prior to training. For those who enter training with little research experience the requirement to produce a quality project in very little time seems (in my opinion) to foster anxiety and fears about competence which then get in the

way of the learning experience and potentially damage the trainees view of research and motivation for future projects. I am currently about to apply for LREC approval for a project and I believe that a) my prior experience and b) my supportive manager are key to me pursuing this. These days, getting a small scale "non-portfolio" study off the ground in the NHS is very difficult without these two things to give motivation.

Soon after qualifying, I worked in a London teaching hospital with good resources and a culture of research. This, and having the energy and lack of personal responsibility of relative youth enabled me to participate in research and related activities.

Control Beliefs, Self-Efficacy and Skill

I have been involved in clinical audits but not research. When I was newly qualified and the skills were still fresh in my mind, I was actively discouraged from carrying out research as I was expected to focus on clinical work. Now if I pushed, I would probably be "allowed" to carry out research but I feel quite rusty in the necessary skills (despite an MSc in Psychological Research Methods!).

Whilst there is very little opportunity (time/finances/encouragement) to undertake a big research project my previous research experience makes me confident to complete ongoing service related audits and research.

I have done additional research training (with the open university) since qualifying which is the only reason I have confidence to do further research. My clinical training gave me very limited research skills.

I think that confidence in research skills also declines with lack of use, making involvement in research seem even more effortful.

Completed a research methods MSc before undertaking clinical training and worked for 2 years in a research environment pre-training, which makes me confident (reasonably!) about carrying out research.

Never been confident with statistics.

I feel deskilled with regard to research.

My research skills are very out of date: My early statistical analyses were done using a mainframe computer or by hand! I have never learned to use SPSS. Near the end of my career, seems too late to start now.

I am now way out of date with clinical and statistical skills relating to research and would not have been able to implement any projects independently as a psychologist.

Over the course of the years of not doing research, skills in planning/conducting research get eroded as is the confidence in doing so.

"Research thinking" or critical appraisal of research however, could be maintained by regularly reading up on studies in journals and staying mindful of reading the studies with a critical mind (e.g. considering limitations of the research findings, any indications for future

directions from the findings, methodology used, representativeness of the sample). Attending forums on critical research appraisal with peers would be another way of staying in "research thinking" mode.

As a principal I am very pro research and its importance but feel too "rusty", (lacking in research skills that are up to date) and busy with clinical work to apply these principals to myself.

Being able to critically appraise a piece of research is perhaps as important or more important than being actively involved in research.

I have consistently used my research skills to develop and carry out audit and service evaluations as part of my clinical practice. I have very rarely tried to get anything published – which is laziness really, as I believe the extra work needed for submission could not be justified in work time – so I haven't done it! I suspect this is true of a lot of us.

Confidence – didn't develop when training.

Personally, it's been so long since I have done any research that I feel very "rusty" and lack confidence in my skills as a researcher. The prospect of research now feels quite daunting.

Although I did a PhD years ago and research dissertation as part of my clinical doctorate, I feel that my research skills have understandably become "rusty" as a result of neglect!

Attitudes

Having started out with strong research interests, I was disappointed to find this was not supported by my head of department or colleagues early in my career.

I think my negative attitude to research does stem from feeling incompetent early on, and the belief that there are good researchers and good clinicians and I am the latter. I believe that we should be informed by our academic field and be better up to date but I think I believe that people who are good researchers should be allowed to do that and good clinicians should be free to do the other and there will hopefully be many who do both! I don't like the experience of research for research sake, just to get papers, and think there is enough of this generated. I would like to change the sense I have of being disappointed in myself as a clinical psychologist because I don't do research, and be allowed to be proud of myself as a well read informed integrative clinician.

My interest in research increased during training. I had enthusiastic, proactive supervisors who encouraged me to publish articles during placements and on completion of training.

I think research is really important.

My current beliefs about research have been positively influenced by my experience in a part-time, 3 year research post, (post qualification as a clin psych), rather than my training, which gave me a negative perception of research.

The enthusiasm associated with research I felt during my training seems to have faded due to

the realities of managing a heavy clinical caseload and other constraints of the job.

I believe many psychologists are put off doing research because their research experience during training was a negative one. I've been told by trainees "I just have to produce this thesis and then I never have to worry about this again".

I undertook my clin psych training in Germany at the University of Liplis . Attitude to research is very sophisticated there and as a result research as part of the training was very in depth. This was invaluable to me. I have not come across a British D.Clin.Psych training programme or an undergraduate course which offers such good quality research training.

There comes a time when research has no implications for career, whereas one might think it might early on. – My issue is securing time from organisational matters (management/supervision).

Not to mention the disparity between attitudes amongst internal supervisors.

I have given enough of myself to research, and will not do it again until it is truly part of the job – I am actually paid and recognised for it. I will not keep giving my health, no matter how helpful the results are for the profession!

I have been keen to be involved in research since qualifying in 2004 but have found this almost impossible in the pressurised NHS environment.

I did the BPS diploma many years ago – research was important. Top up doctorate in 2000 reawakened my interest.

I have enjoyed very good career progression to the Head of Service level without needing to be involved in research. As a service head my priority is to support my staff in delivering a high quality service.

Subjective Norms

Whilst clinical training places an emphasis on developing competencies in research – the actual practice of clinical psychology expects a psychologist not to undertake research. Research is an "extra". However, having skills in analysis of data and being curious/critical is much valued by colleagues.

Research is often cited as valued by NHS trusts but infrequently given the time and resources needed.

I think it has always been difficult for clin psychs to do research and you'll be aware of articles in the BPS house journal about this since the 1970's.

We are often "told" by our profession (BPS, training courses) that psychologists "should" do research, but I am not sure what the NHS wants. I think the NHS wants us to get through waiting lists.

Not to mention the disparity between attitudes amongst internal supervisors

Doing the top up doctorate at the same time as working full time cost me my marriage!

Clinicians who conduct research are seen as self-promoting and selfish.

I have enjoyed very good career progression to the Head of Service level without needing to be involved in research. As a service head my priority is to support my staff in delivering a high quality service.

I haven't worked in a psychology dept since training where research was a frequently undertaken activity – I imagine if my colleagues had been undertaking research more regularly and/or if it had been "part of the conversation and culture" that I might have developed research as an activity.

My course led us to view research as an integral part of clinical work. To my regret I have never lived up to my aspirations in this respect! I regard clinical psychologists as scientists and we should do much more research than we do!

Professional Roles

I believe that we should be informed by our academic field and be better up to date but I think I believe that people who are good researchers should be allowed to do that and good clinicians should be free to do the other and there will hopefully be many who do both! I don't like the experience of research for research sake, just to get papers, and think there is enough of this generated. I would like to change the sense I have of being disappointed in myself as a clinical psychologist because I don't do research, and be allowed to be proud of myself as a well read informed integrative clinician.

I have loads of good ideas for CRTs [research] but I am a lone practitioner. But my energies/research of literature to prepare teaching/lecturing and developing new consultancy programmes that make money – I have to pay my mortgage and fund my own pension. I was in the NHS for 20 years and had no time for research – I am entirely patient focused, but I keep very up to date on new research to implement. I am a practitioner with a scientific approach. I could write loads of No.1 studies but I develop my websites instead and they make money

In my view, it is unethical to have undertaken 3 years doctoral training – at great cost to the taxpayer – and then utilise only 2/3 of knowledge and skills obtained. As a profession we are arrogant in what we expect from colleagues, NHS and healthcare systems and the public in general. We use the term 'consultant' with no regard for research and audit and evaluation skills – compare this to medical consultants. Would our profession feel as threatened by the idea and philosophy behind IAPT workers if we were more secure in our unique and invaluable skills that doctoral training aims to provide us with?

There comes a time when research has no implications for career, whereas one might think it might early on. – My issue is securing time from organisational matters (management/supervision).

I have enjoyed very good career progression to the Head of Service level without needing to be involved in research. As a service head my priority is to support my staff in delivering a high quality service.

My view if it's any use to you...

I work for the NHS as a clinician with roles of teaching, training and supervision inherent,... but research wasn't on the job description.
I have an OU job to satisfy my academic/research interests.

Please publish the findings, given new ways of working the contribution of research for applied psychology will be critical

However, with waiting list for therapy of 18 months plus (!) I'm afraid I am viewed as a therapist only and opportunities/priorities are very different. What is particularly disappointing is the realisation that without such opportunities, not only does the profession lose some of its identity but personal opportunities for career progression are affected.

Research is fundamental to our posts (specialist practitioner) to justify agenda for change banding, 8b for principal, 8c for consultants.

Like many of my peers I came into clinical training in order to become a practitioner of therapy fundamentally. I study and apply research findings but my doctorate training confirmed that whilst research can be rewarding, the demands and rigour required to produce quality research are not realistic in my current work/family situation. In my view this can leave you with a sense of inadequacy as research is so highly prized ("how many publications have you got?"). This further deters me. Meanwhile we're all squirreling away trying to help people feel better and somehow this is given less recognition during training.

I was fortunate to be trained by three strongly research focussed practitioners and at a time when the profession had more freedom!! The role of Heads of Departments now must be to push the research importance with senior managers to provide balanced appointments.

need more joint clinical/academic appointments.

Personal Identity

As I trained later in my career (illegible) as a CP and as a single parent, financial progress in the NHS has always been a priority.

Having only completed my doctorate last year, I now need my life back + as a band 7 I do not have sufficient power to shape my role. In the long term I want to do research again very much but not at the expense of my personal life + well being, so I will need to be in a post that gives me time and resources to do that research, if I can find one!

I'm disappointed but see no capacity and time to ever do this now on part-time clinical hours (after maternity leave).

Doing the top up doctorate at the same time as working full time cost me my marriage!

I have a demanding full-time job and my priority out-of-hours is to spend time with my family. (in my experience most active researchers are men who have a partner at home who carries most of the domestic responsibilities).

Now that I have my son to consider, I was likely to have given the project to someone else, despite the work I have already put into it.

This, and having the energy and lack of personal responsibility of relative youth enabled me to participate in research and related activities.

When I have done research in my band 7 post, I had dedicated time. In my subsequent band 8a and 8b posts, I do not and so end up doing it mostly in my free time (I don't have kids!!)

The majority of psychologists are women – who may go on to have children – so then work part time – fitting research into the working day becomes very difficult – higher managers are more interested in how many people you see, rather than research – if I wanted to do research I'd have to do it in my own time – something that is impossible at the moment with a young baby.

I guess I could move to a job which allows more research, but opportunities are few and would necessitate me having to move location. Merging of trusts means such a move would mean I could not get home in time to collect my children from childcare.

Appendix 9

Summary Letter to Ethics Panel

Martin Parsons
Trainee Clinical Psychologist
Department of Applied Psychology

Professor M. M. Callanan
Chair of the Salomons Ethics Panel
Department of Applied Psychology

8th July 2011

Dear Professor Callanan,

Your Ref: MMC/V75
"Factors Affecting the Research Activity of UK Clinical Psychologists"

This project is now complete and I am writing to provide you with a brief summary of the results. The study had two parts to it; a factor analysis of the Research Training Environment Scale – Revised in conjunction with a mediation analysis looking at the role the elicited factors play in influencing research intention; and a thematic analysis of qualitative comments from clinical psychologists regarding influences on their research activity. Both parts were informed by a theoretical model based on the theory of planned behaviour.

Two factors were derived, entitled Stimulation and Expectations. The former appeared to encompass creative, social and applied aspects of research training whilst the latter related to how research should be done, how advanced it should be and the value it should carry. The relationship between stimulation and research intention was fully mediated by theory of planned behaviour components whilst expectations was only partially mediated by the same variables and had the strongest relationship with intention.

The thematic analyses elicited considerable detail regarding aspects of the work environment that influence research activity, but also showed overall support for the previously proposed model. Quantitative and qualitative findings were integrated to create a new model and recommendations for ways to increase research activity via training and the work environment were made, as well as calls for further research into the work environment.

Kind regards,

Yours sincerely,

Martin Parsons
Trainee Clinical Psychologist

Appendix 10

Author Guidelines for Clinical Psychology and Psychotherapy: A Potential Journal for Publication

MANUSCRIPT SUBMISSION

Clinical Psychology and Psychotherapy operates an online submission and peer review system that allows authors to submit articles online and track their progress via a web interface. Please read the remainder of these instructions to authors and then visit http://mc.manuscriptcentral.com/cpp and navigate to the Clinical Psychology and Psychotherapy online submission site. IMPORTANT: Please check whether you already have an account in the system before trying to create a new one. If you have reviewed or authored for the journal in the past year it is likely that you will have had an account created.

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File types. Preferred formats for the text and tables of your manuscript are .doc, .rtf, .ppt, .xls. **LaTeX** files may be submitted provided that an .eps or .pdf file is provided **in addition** to the source files. Figures may be provided in .tiff or .eps format.

Please note: This journal does not accept Microsoft Word 2007 documentsat this time. Please use Word's "Save As" option to save your document as a.doc file type. If you try to upload a Word 2007 document in ManuscriptCentral you will be prompted to save .docx files as **.doc** files.

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Manuscript style. The language of the journal is (British) English. All submissions must have a title, be printed on one side of A4 paper with numbered pages, be double-line spaced and have a 3cm wide margin all around. Illustrations and tables must be printed on separate sheets, and not incorporated into the text.

MANUSCRIPT STYLE

The language of the journal is English. 12-point type in one of the standard fonts: Times, Helvetica, or Courier is preferred. It is not necessary to double-line space your manuscript. Tables must be on separate pages after the reference list, and not be incorporated into the main text. Figures should be uploaded as separate figure files.

- During the submission process you must enter the full title, short title of up to 70 characters and names and affiliations of all authors. Give the full address, including email, telephone and fax, of the author who is to check the proofs.
- Include the name(s) of any **sponsor(s)** of the research contained in the paper, along with **grant number(s)** .
- Enter an **abstract** of up to 250 words for all articles [except book reviews]. An abstract is a concise summary of the whole paper, not just the conclusions, and is understandable without reference to the rest of the paper. It should contain no citation to other published work.

- All articles should include a **Key Practitioner Message** — 3-5 bullet points summarizing the relevance of the article to practice.
- Include up to six **keywords** that describe your paper for indexing purposes.

Research Articles: Substantial articles making a significant theoretical or empirical contribution.

Reviews: Articles providing comprehensive reviews or meta-analyses with an emphasis on clinically relevant studies.

Assessments: Articles reporting useful information and data about new or existing measures.

Practitioner Reports: Shorter articles that typically contain interesting clinical material.

Book Reviews: Published on invitation only. Critical summaries of recent books that are of general interest to readers of the journal.

Reference style . The APA system of citing sources indicates the author's last name and the date, in parentheses, within the text of the paper.

A. A typical citation of an entire work consists of the author's name and the year of publication .

Example: Charlotte and Emily Bronte were polar opposites, not only in their personalities but in their sources of inspiration for writing (Taylor, 1990). Use the last name only in both first and subsequent citations, except when there is more than one author with the same last name. In that case, use the last name and the first initial.

B. If the author is named in the text, only the year is cited .

Example: According to Irene Taylor (1990), the personalities of Charlotte. . .

C. If both the name of the author and the date are used in the text, parenthetical reference is not necessary .

Example: In a 1989 article, Gould explains Darwin's most successful. . .

D. Specific citations of pages or chapters follow the year .

Example: Emily Bronte "expressed increasing hostility for the world of human relationships, whether sexual or social" (Taylor, 1988, p. 11).

E. When the reference is to a work by two authors, cite both names each time the reference appears .

Example: Sexual-selection theory often has been used to explore patters of various insect matings (Alcock & Thornhill, 1983) . . . Alcock and Thornhill (1983) also demonstrate. . .

F. When the reference is to a work by three to five authors, cite all the authors the first time the reference appears. In a subsequent reference, use the first author's last name followed by et al . (meaning "and others") .

Example: Patterns of byzantine intrigue have long plagued the internal politics of community college administration in Texas (Douglas et al ., 1997) When the reference is to a work by six or more authors, use only the first author's name followed by et al . in the first and all subsequent references. The only exceptions to this rule are when some confusion might result because of similar names or the same author being cited. In that case, cite enough authors so that the distinction is clear.

G. When the reference is to a work by a corporate author, use the name of the organization as the author .

Example: Retired officers retain access to all of the university's educational and recreational facilities (Columbia University, 1987, p. 54).

H. Personal letters, telephone calls, and other material that cannot be retrieved are not listed in References but are cited in the text .

Example: Jesse Moore (telephone conversation, April 17, 1989) confirmed that the ideas. . .

I. Parenthetical references may mention more than one work, particularly when ideas have been summarized after drawing from several sources. Multiple citations should be arranged as follows .

Examples:

- List two or more works by the same author in order of the date of publication: (Gould, 1987, 1989)
- Differentiate works by the same author and with the same publication date by adding an identifying letter to each date: (Bloom, 1987a, 1987b)
- List works by different authors in alphabetical order by last name, and use semicolons to separate the references: (Gould, 1989; Smith, 1983; Tutwiler, 1989).

All references must be complete and accurate. Where possible the DOI for the reference should be included at the end of the reference. Online citations should include date of access. If necessary, cite unpublished or personal work in the text but do not include it in the reference list. References should be listed in the following style:

Journal Article

Gardikiotis, A., Martin, R., & Hewstone, M. (2004). The representation of majorities and minorities in the British press: A content analytic approach. European Journal of Social Psychology, 34 , 637-646. DOI: 10.1002/ejsp.221

Book

Paloutzian, R. F. (1996). Invitation to the psychology of religion (2nd ed.). Boston: Allyn and Bacon.

Book with More than One Author

Natarajan, R., & Chaturvedi, R. (1983). Geology of the Indian Ocean . Hartford, CT: University of Hartford Press.
Hesen, J., Carpenter, K., Moriber, H., & Milsop, A. (1983). Computers in the business world . Hartford, CT: Capital Press. and so on.
The abbreviation et al. is not used in the reference list, regardless of the number of authors, although it can be used in the text citation of material with three to five authors (after the inital citation, when all are listed) and in all parenthetical citations of material with six or more authors.

Web Document on University Program or Department Web Site

Degelman, D., & Harris, M. L. (2000). APA style essentials . Retrieved May 18, 2000, from Vanguard University, Department of Psychology Website: http://www.vanguard.edu/faculty/ddegelman/index.cfm?doc_id=796

Stand-alone Web Document (no date)

Nielsen, M. E. (n.d.). Notable people in psychology of religion . Retrieved August 3, 2001, from http://www.psywww.com/psyrelig/psyrelpr.htm

Journal Article from Database

Hien, D., & Honeyman, T. (2000). A closer look at the drug abuse-maternal aggression link. Journal of Interpersonal Violence, 15 , 503-522. Retrieved May 20, 2000, from ProQuest database.

Abstract from Secondary Database

Garrity, K., & Degelman, D. (1990). Effect of server introduction on restaurant tipping. Journal of Applied Social Psychology, 20 , 168-172. Abstract retrieved July 23, 2001, from PsycINFO database.

Article or Chapter in an Edited Book

Shea, J. D. (1992). Religion and sexual adjustment. In J. F. Schumaker (Ed.), Religion and mental health (pp. 70-84). New York: Oxford University Press.

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artwork itself, not in the figure legend. All illustrations must be supplied at the correct resolution:

- Black and white and colour photos - 300 dpi
- Graphs, drawings, etc - 800 dpi preferred; 600 dpi minimum
- Combinations of photos and drawings (black and white and colour) - 500 dpi

The cost of printing **colour** illustrations in the journal will be charged to the author. The cost is approximately £700 per page. If colour illustrations are supplied electronically in either **TIFF** or **EPS** format, they **may** be used in the PDF of the article at no cost to the author, even if this illustration was printed in black and white in the journal. The PDF will appear on the Wiley Online Library site.

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