

The gap between Science and Practice: how therapists make their clinical decisions

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Abstract

Recent surveys have found that many patients are not receiving empirically-supported treatments and that therapists may not update their knowledge of research. Studies have found that therapists prefer to use their clinical experience rather than research findings to improve their practice, although Cognitive Behavioral (CB) practitioners have been found to use research more frequently than therapists of other theoretical orientations. The organization in which therapists work has been shown to impact attitudes toward working practices, but studies have not examined whether workplace requirements to use research affect therapists' practice. Studies to date have mainly been conducted in North America. These findings may not be generalizable to the UK where there is a National Health Service (NHS), which requires the use of empirically supported treatments. The first part of this study aimed to investigate which factors were influential in therapists' choice of theoretical orientation and to see whether CB practitioners differed from other therapists in the factors that influenced their choice of theoretical orientation. The second part tested whether therapists' theoretical orientation or their workplace influenced the frequency with which they used research in their clinical decision-making. The final part investigated whether being a CB practitioner or working in the NHS was associated with having a favorable attitude toward research. An online survey was sent to 4,144 psychological therapists in England; 736 therapists responded (18.5%). Therapists reported that research had little influence over their choice of theoretical orientation and clinical decision-making compared to other factors, specifically, clinical experience and supervision. CB practitioners and NHS therapists, regardless of their orientation, were significantly more likely to use research than other therapists and were more likely to have a positive attitude toward research.

Key Words: Evidence based treatments; Research; Sources; Cognitive Behavioral Therapy; Dissemination

Highlights

- An online survey was used to investigate the sources used to make clinical decisions.
- Therapists reported that research had little influence in clinical decision-making.
- Supervision was felt to be the most frequently used factor in clinical decision-making.
- CB practitioners were significantly more likely to use research than other therapists.
- Therapists in the National Health Service were more likely to use research.

The gap between Science and Practice: how therapists make their clinical decisions

The evidence based medicine movement argues that the treatments offered to patients should be informed by the most robust research evidence available (Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996). Research evidence refers to data gathered systematically from a range of methodologies including qualitative studies, case studies and randomized controlled trials. This movement has led to various organizations, including the American Psychological Association (APA), recommending the use of "clearly specified psychological treatments shown to be efficacious in controlled research with a delineated population" (Chambless & Hollon, 1998, p7). These treatments are referred to as Empirically Supported Treatments (ESTs).

Cognitive Behavioral Therapy (CBT) is the theoretical orientation with the most empirical support for its efficacy in treating a range of disorders. It has been consistently found to be efficacious in treating numerous psychological disorders in both adults (Hollon & Ponniah, 2010; Öst, 2008; Rector & Beck, 2001) and children (Chorpita et al., 2011). Some treatments from other theoretical orientations are backed by empirical support for the treatment of some disorders, but not others. For example, Interpersonal Psychotherapy and Brief Psychodynamic Therapy are efficacious in the treatment of depression and are recommended in the UK by the National Institute for Health and Care Excellence (NICE, 2009; Shedler, 2010), but psychodynamic therapy has been shown to be harmful in treating schizophrenia (Mueser & Berenbaum, 1990).

Recent reviews of care have found that patients are not receiving ESTs for psychological disorders (Baker, McFall, & Shoham, 2008; Dobson & Beshai, 2013; Insel, 2010; Shafran et al., 2009). Even if therapists practice ESTs, it does not mean they use

research to update their practice. For example, there is evidence that some CB practitioners rely on their clinical experience and omit key components of therapy for Obsessive Compulsive Disorder that are required for their practice to be considered minimally effective, as demonstrated in controlled trials (Stobie, Taylor, Quigley, Ewing, & Salkovskis, 2007). This is often referred to as ‘therapist drift’ (Waller, 2009).

There are significant problems with therapists’ reliance on their personal experience to make clinical decisions as this type of experience has been found to be subject to cognitive biases (Dawes, Faust, & Meehl, 1989; Grove et al., 2000). For example, Hannan and colleagues (2005) compared the judgment of clinicians in a college counseling center with a research-derived algorithm designed to predict which patients were likely to deteriorate in treatment. Therapists predicted deterioration correctly in 1 out of 550 cases, even though it occurred in 40 patients, compared to the algorithm, which identified 100% of cases. To change therapist behavior it is necessary to examine the sources of information therapists use to inform their practice and use this knowledge to focus efforts to change behavior.

One of the earliest investigations into the sources therapists use to influence their clinical decision-making found that only 10% of clinical psychologists used psychotherapy research as the main source of information on which to base their clinical practice (Morrow-Bradley & Elliott, 1986). A further study, which surveyed psychological therapists of various theoretical orientations as a sample, found that only 35% of respondents read peer-reviewed journals (Beutler, Williams, & Wakefield, 1993). The authors found that clinicians tended to have positive or neutral attitudes toward research and stated that they did use science to increase their knowledge. Unfortunately, clinicians searched for knowledge in places where peer-reviewed research articles were unlikely to be found. For example, 76% responded that they read professional newspapers, 58% accessed practice oriented journals and 51% mentioned popular books.

Recent studies have had a greater focus on contrasting the use of research between therapists of differing theoretical orientations (Ogilvie, Abreu, & Safran, 2009; Safran, Abreu, Ogilvie, & DeMaria, 2011; Stewart & Chambless, 2007; Stewart, Stirman, & Chambless, 2012). By understanding which information sources therapists from different theoretical orientations prefer, efforts to disseminate ESTs can be tailored to therapists to maximize impact (Noar, Benac & Harris, 2007). These studies have found substantial differences between therapists' use of research depending on their theoretical orientation. Stewart and Chambless (2007) completed a large survey of US therapists in private practice and found that after controlling for research emphasis in graduate school, CB therapists maintained significantly more positive views of research than psychodynamic practitioners and eclectic practitioners. These findings are perhaps not surprising given that CBT is supported by a large body of research demonstrating its efficacy in treating a range of disorders, whereas there is only supportive empirical evidence for the use of psychodynamic psychotherapy in the treatment of certain disorders (NICE, 2009; Mueser & Berenbaum, 1990; Shedler, 2010).

Studies have also found that there are differences between therapists in what drives them to choose their theoretical orientation. Pope and Tabachnick (1994) surveyed 800 therapists and found that psychodynamic therapists were more likely than CB practitioners to believe that receiving therapy should be a requirement for practicing therapy. Similarly, Orlinsky, Botermans and Rønnestad (2001) surveyed nearly 4,000 therapists in Germany, the USA, Norway, Portugal and Switzerland to see what they believed had influenced their professional development. In this study, non-CB practitioners reported that an important factor in guiding their choice of theoretical orientation was receiving their own therapy. CB practitioners did not view it as being as important.

In addition to understanding whether results generalize across theoretical orientations,

it is important to consider whether findings generalize across cultures and health systems. A recent study undertaken by Safran and colleagues (2011) used a sample of therapists from around the world who were all members of the Society for Psychotherapy Research. A large proportion of this sample (82%) had conducted research themselves. The results showed that therapists believed that research publications were the least helpful source of information to their clinical practice compared to ongoing clinical experience, which was rated to be the most helpful source of information. Other sources considered helpful by therapists included: supervision/consultation with others, conducting psychotherapy research, theoretical publication and/or presentations and the experience of being a client. The authors also compared respondents' ratings of the helpfulness of quantitative versus qualitative research and found no significant differences. Like Stewart and Chambless's study (2007), differences between theoretical orientations were found. Psychodynamic therapists rated the importance of psychotherapy research significantly lower than therapists of other theoretical orientations and ongoing experience with clients significantly higher than therapists from other therapeutic orientations.

The sample in the study conducted by Safran and colleagues (2011) was largely North American, with 52% of the sample hailing from the United States, 7% from Canada and very few came from the United Kingdom (4%). The United Kingdom (UK) has a unique health care system: the National Health Service (NHS), which offers treatments that are free at the point of access for all patients and primarily funded through general taxation rather than requiring insurance payments from the government or private companies.

In the UK therapists can choose to work in the NHS and be paid a flat rate salary by the organization, choose to solely work in private practice or work across sectors. All NHS workers have line managers and work in specific buildings. Unlike other environments, the NHS working environment mandates the delivery of evidence-based medicine in accordance

with national guidance (Department of Health, 2011). Each NHS service is required to submit reports about their adherence to ESTs and is regulated by two independent government organizations, the Care Quality Commission and NHS Monitor (Department of Health, 2011). As well as a general emphasis on the use of evidence based treatments, separate services have been created to increase the use of evidence based treatments for common mental health disorders. In October 2008 the Department of Health invested £173 million in training psychological therapists in ESTs and delivering them to the population as part of the Improving Access to Psychological Therapies (IAPT) initiative (Clark, 2011). A further £260 million was invested in 2010 to ensure that the development of the services was sustained until 2015. Investigations into these services has found that most patients in IAPT services receive ESTs and the minority that do not have a reduced likelihood of recovery (Gyani, Shafran, Layard & Clark, 2013). It is important to explore a system with a unique environment since the commitment and mandate to use ESTs may result in a change of attitude towards research.

There is evidence that the organization in which therapists' work can have an impact on their attitudes toward working practices. Safran and colleagues (2011) found that therapists in their sample, who were mainly university based, were more likely to favor research than therapists in Morrow-Bradley and Elliott's sample, who were mainly based in private practice (Morrow-Bradley & Elliott, 1986). Hatfield and Ogles found that therapists working in an institution that requires them to use outcome measures are more likely to use outcome measures than those in private practice (Hatfield & Ogles, 2007).

Conversely, studies by Aarons and colleagues (Aarons, 2004; Aarons, Cafri, Lugo & Sawitzky, 2012; Aarons & Sawitzky, 2006) have found that therapists who had less favorable attitudes towards the use of ESTs stated that they were unlikely to adopt them, even if they were required to do so by the organization in which they worked. Aarons (2004) also found

that therapists who worked in a less bureaucratic organization were likely to have more favorable attitudes toward research, indicating that the type of institution is important. Surveys in the NHS have found that family physicians view the emphasis on using evidence based medicine as a bureaucratic exercise (Harrison & Dowswell, 2002) and has been described as “the latest move in an audit revolution” (Charlton & Miles, 1998, p.372).

No previous study has been conducted exclusively in the UK, with therapists working in a range of workplace settings from a variety of orientations (including ‘creative arts’) and with major Government investment in the delivery of ESTs and major requirements to use ESTs in practice. The primary aim of the study was to better understand the role of research in (1) therapists’ theoretical orientation, (2) clinical decision-making and (3) workplace setting.

Specifically it was hypothesized that:

(1a) Clinical experience will be more influential than research when therapists choose their theoretical orientation.

(1b) Research will be more influential in CB practitioners’ choice of theoretical orientation than other therapists.

(2a) Clinical experience will be used more frequently than any other measured factor in therapists’ routine clinical decision-making.

(2b) CB practitioners will use research more frequently than other therapists when making clinical decisions.

(2c) NHS therapists will use research more frequently than therapists who do not work in the NHS when making clinical decisions.

(3) Both CB practitioners and therapists working in the NHS, regardless of orientation, will have more favorable attitudes toward research than other therapists.

Method

Participants

Participants were psychological therapists based in England. They were recruited through the websites of the: British Association for Counselling & Psychotherapies (n=2,988), British Association for Behavioural and Cognitive Psychotherapies (n=602), British Association of Art Therapists (n=115), British Psychological Society (n=208) and the British Association of Drama Therapists (n=231).

Seven hundred and thirty six therapists responded (18.5%). The majority of respondents were female (n=569, 78.5%) and their mean age was 54.11 years (SD=9.18). The mean number of years of therapists' clinical experience was 12.28 (SD=7.57) and the mean number of hours per week therapists practiced was 13.64 (SD=7.76). Seventy three participants stated that their highest professional qualification was an undergraduate degree, 252 participants stated that they had a masters degree, 325 stated they had a postgraduate diploma (a qualification obtained after graduating from university but without the requirement of an independent research project), 38 stated they had a doctorate (eight of which were medical doctorates) and 30 stated that they either did not have one of the qualifications listed, or that their highest qualification was not listed. This is in line with the sample in Aarons's (2004) study, in which 10% had doctorates, and Aarons and colleagues' (2012) study, in which 7% had doctorates. However, this is different from the sample in Stewart and Chambless's (2007) study, in which 95% had a doctorate, and from the sample Safran and colleagues' (2011) study in which 68% had PhD level qualifications.

The theoretical orientations that respondents identified with can be seen below in Figure 1. Eighty-seven therapists used the open text box to state that they would consider themselves eclectic, but preferred the term 'integrative therapists'. The categories of 'integrative' and 'eclectic' were combined. As very few therapists stated that that they were Cognitive Analytical Theory therapists (n=3), Family Based Interventions therapists (n=4) or

Eye Movement Desensitization and Reprocessing therapists (n=10), these categories were collapsed into the “other” category. A large proportion of therapists stated that they worked in both the NHS and in private practice. These participants were analyzed as being in the NHS to isolate the effect of the NHS and to ensure that analyses were suitably powered. Respondents who identified with the ‘other’ category when stating their workplace tended to respond that they worked in the charitable sector, an education setting or for an Employment Assistance Program. A logistic regression indicated that CB practitioners were nearly four times more likely to work in the NHS (either exclusively in the NHS or by working in both the NHS and private practice) than therapists of any other theoretical orientation (*Wald Statistic (1)*=42.22, *Odds ratio*= 3.92, *p*<.001, *95% Lower CI*=2.60, *95% Upper CI*= 5.93).

INSERT FIGURE 1 ABOUT HERE

Materials

A questionnaire was developed for this study. It comprised the following four sections: (a) questions about respondents’ demography, (b) questions about the influences of therapists’ choice of therapeutic orientation, (c) questions about regularity with which therapists used certain sources to enhance their clinical practice and (d) questions about therapists’ attitudes toward research. Sections b, c and d each took the form of a single question to which participants responded on a 7-point Likert scale. The four parts of the questionnaire are described in detail below.

Demography. The demographic variables collected were: theoretical orientation, workplace context, age, gender, years of clinical experience, respondents’ highest qualification and number of hours a week they spent treating patients. The categories that therapists could choose from were: Humanistic/Experiential, Cognitive/Behavioral, Family Based Interventions, Art, Drama or Music (referred to as Creative Arts Therapists), Eye

Movement Desensitization and Reprocessing, Psychodynamic, Cognitive Analytical Theory and Eclectic. Family Based Interventions refer to Maudsley based family therapy devised by Christopher Dare and colleagues for eating disorders (Russell, Szmukler, Dare & Eisler, 1987). This orientation was included in the Stewart & Chambless study (2007). An open text box was included for participants who felt that they were not represented in these groups. Therapists picked their one primary orientation. To assess where respondents worked they were asked: “Do you work in” and were presented with four tick boxes: NHS, Private Practice, both or other. Respondents who entered “other” were given an open text box to respond.

Influences on theoretical orientation. This section assessed how certain sources of information influenced therapists’ choice of therapeutic orientation. The question asked was: “How influential was each of the following in deciding your favoured theoretical orientation?”. Participants were then given a list of sources, which were taken from the Stewart and Chambless (2007) study. The list of sources included: research evidence, personal experience with clients, clinical training, the treatment’s appeal to clients, intuition, and past experience with personal therapy. Participants were required to give a response for each source of information. A value of 1 was recorded if participants responded “Not at all influential”, a score of 4 was recorded if participants stated “Sometimes” and a value of 7 was recorded if participants responded with the answer “Extremely Influential”.

Investigating factors influencing clinical decision-making. This section assessed the frequency with which therapists used certain sources to enhance their clinical practice. The question asked was: “Which sources do you currently use to increase your skills and effectiveness as a clinician?”. Participants were then given a list of sources, which were adapted from the Stewart and Chambless (2007) study. The list of sources included: personal experience with clients, empirical research from controlled trials, supervision, empirical

research from case studies, peer discussion, popular books, clinical case observations, outcome measures and clinical guidelines. A value of 1 was recorded if participants responded “Never”, a score of 4 was recorded if participants stated “Sometimes” and a value of 7 was recorded if participants responded with the answer “Always”. Participants were required to give a response for each source of information.

Research Attitudes Index. The section used to investigate therapists’ attitudes toward research was based on the ‘Esteem for and Utilization of Research Scale’ (Stewart & Chambless, 2007) and the ‘Evidence-Based Practice Attitude Scale’ (EBPAS; Aarons, 2004). It was necessary to adapt these measures as the EBPAS specifically focuses on the use of manualized treatments, rather than research in general and the ‘Esteem for and Utilization of Research Scale’ only focuses on controlled trials. The ‘Research Attitudes Index’ was developed by AG, RS and SR to include beliefs about the value of research above clinical experience. All the questions asked in the index can be seen in Table 1. The questions were adapted to suit the UK context of the study. A value of 1 was recorded if participants responded “Strongly Disagree”, a score of 4 was recorded if participants stated “Neutral” and a value of 7 was recorded if participants responded with the answer “Strongly Agree”. Cronbach’s alpha was .78 and the Kaiser–Meyer–Olkin Measure of Sampling Adequacy was .79 on the basis of the responses of the 450 participants who gave responses to all items. A single factor solution accounted for 19.4% of the variance.

INSERT TABLE 1 ABOUT HERE

Procedure

An email was sent to all respondents to ask whether they would like to take part in a study into their attitudes toward research and the sources they use to make clinical decisions (n=4,144). The email contained a link to the questionnaire, hosted by SurveyMonkey.com. This was sent in September 2011. After the initial email, a reminder was sent three weeks

later. Of the 4,144 emails sent, 156 emails did not reach their intended recipient. The response rate was calculated from the 3,988 emails that were sent and did not bounce. The contact details of therapists were obtained through the websites of the organizations listed above. Therapists were told that for every person taking part in the survey, 10p would be donated to the Samaritans or MIND, two UK-based mental health charities.

Analytical approach

All analyses were conducted using SPSS 19 and Excel 2011. Repeated measures ANOVAs were used to compare the sources used to influence the respondents' choice of theoretical orientation and the frequency with which respondents stated they used sources of information to make clinical decisions. Planned comparisons were used to understand whether research was used more or less often than other sources. Where the assumption of normality was not met, Friedman's test and Wilcoxon sign tests were used as a replacement for repeated measures ANOVAs and planned comparisons, respectively. A multiple linear regression was used to investigate whether being a CB practitioner and whether a therapist worked in the NHS was associated with attitudes toward research. The multiple linear regression allowed the simultaneous investigation of whether or not a therapist worked in the NHS and/or was a CB practitioner, age, gender, years of clinical experience and number of hours worked as a therapist. Power analyses were modelled on the response rates from the previous literature (Stewart & Chambless, 2007). The use of a simultaneous entry method was important, as CB practitioners were more likely to work in the NHS than other therapists. Cronbach's alpha was used to assess the internal consistency of the Research Attitudes Index. A Principal Component Analysis was used to understand how much variance was explained by a single factor.

MANOVAs were conducted to investigate the effect of theoretical orientations and organizations on the sources they used to influence their choice of theoretical orientation or

clinical decision-making. To simplify the analyses, all non-CB practitioners were collapsed into one group and compared to CB practitioners. Box's M test and Levene's test were used to test for violations in the assumptions of equality of covariance matrices and homoscedasticity. Rank transformations were used when the assumptions of normality were violated (Zwick, 1985). If these measures failed, a Mann-Whitney U test was used. Post hoc planned comparisons were made with a Bonferroni correction. Partial eta squared, r and beta are reported as effect sizes for MANOVAs, non-parametric tests and linear regression analyses, respectively. Sensitivity analyses were undertaken to test whether IAPT therapists were more likely to use evidence from controlled studies than other NHS therapists and to test whether therapists who worked exclusively in the NHS were more likely to use evidence from controlled studies than therapists who worked in both the NHS and private practice.

Results

Hypothesis 1a. Clinical experience will be more influential than research when therapists choose their theoretical orientation.

All dependent variables violated the assumptions of normality according to Kolmogorov-Smirnov tests; therefore, a non-parametric Friedman test was used. A significant difference between the importance of the sources on therapists' theoretical orientation was observed ($X^2(5)=726.50, p<.001$); see Table 2. Therapists' choice of theoretical orientation was most frequently based on intuition, personal experience and clinical training. Use of research was reported to be the least influential of all the options provided. Post hoc planned comparisons found that research studies were used significantly less than personal experience with clients ($z=18.15, p<.001, r=.713$), past experiences with personal therapy ($z=12.03, p<.001, r=.506$), clinical training ($z=17.15, p<.001, r=.669$), intuition ($z=18.52, p<.001, r=.722$) and whether therapists felt their choice of theoretical

orientation would appeal to clients ($z=14.90, p<.001, r=.588$).

INSERT TABLE 2 ABOUT HERE

Hypothesis 1b. Research will be more influential in CB practitioners' choice of theoretical orientation than other therapists.

A MANOVA was used to investigate whether CB practitioners' were more likely than other therapists to report that research was influential in choosing their theoretical orientation. A rank transformation was used. Tests of equality of variance and equality of covariances were non-significant, indicating that the analyses met the required assumptions. Identifying as a CB practitioner was found to have an impact on the sources therapists felt were important when first choosing their theoretical orientation (*Hotelling's Trace*=.162, $F(6,515)=13.95, p<.001, \eta_p^2=.140$). CB practitioners were more likely to use research evidence to inform their choice of theoretical orientation than other therapists ($F(1,520)=54.49, p<.001, \eta_p^2=.095$). CB practitioners were less likely to report that their past experience with personal therapy ($F(1,520)=29.00, p<.001, \eta_p^2=.053$) and intuition ($F(1,520)=6.40, p=.012, \eta_p^2=.012$) influenced their choice of theoretical orientation. There were no significant differences between CB practitioners and other therapists in the perceived influence of the following factors on choice of theoretical orientation: personal experience with clients ($F(5,520)=1.68, p=.196, \eta_p^2=.003$), clinical training ($F(1,520)=0.27, p=.605, \eta_p^2=.001$) and whether therapists felt their choice of theoretical orientation would appeal to clients ($F(1,520)=0.02, p=.904, \eta_p^2<.001$).

Hypothesis 2a. Clinical experience will be used more frequently than any other measured factor in therapists' routine clinical decision-making.

A Friedman's ANOVA showed that therapists reported using some sources of information significantly more often than others ($X^2(8)=2296.39, p<.001$). The most used

source was supervision, followed by personal experience with clients, clinical guidelines, peer discussion, clinical case observations, outcome measures, case studies, controlled trials followed by popular books. Table 3 shows the mean responses to questions about clinical decision-making. Planned comparisons found that controlled studies were used significantly less than personal experience with clients ($z=19.74, p<.001, r=.59$), supervision ($z=20.89, p<.001, r=.79$), empirical research from case studies ($z=4.86, p<.001, r=.19$), peer discussion ($z=12.51, p<.001, r=.48$), clinical case observations ($z=10.63, p<.001, r=.40$), and outcome measures ($z=7.38, p<.001, r=.28$). There was no significant difference between the frequency of use of clinical guidelines and controlled trials after the Bonferroni correction was applied ($z=2.42, p=.008, r=.19$). Popular books were used significantly less than controlled studies ($z=11.02, p<.001, r=.42$). As previous studies have found that personal experience was used more often than all other sources, a Wilcoxon test was used to clarify whether therapists' preference for supervision to past experiences with clients was significant which was found to be the case ($z=4.03, p<.001, r=.15$).

INSERT TABLE 3 ABOUT HERE

Hypothesis 2b. CB practitioners will use research more frequently than other therapists when making clinical decisions. A MANOVA found that therapists' theoretical orientation was associated with the frequency with which they reported using certain sources to make routine clinical decisions (*Hotelling's Trace*=.191, $F(9,679)=14.38, p<.001, \eta_p^2=.160$). The analysis was undertaken with a rank transformation due to inequality of covariance matrices. CB practitioners reported using the following sources of information more frequently than was reported by other therapists: research evidence from controlled trials ($F(1,687)=76.56, p<.001, \eta_p^2=.100$), empirical research from case studies ($F(1,687)=24.19, p<.001, \eta_p^2=.034$), popular books ($F(1,687)=19.69, p<.001, \eta_p^2=.028$), clinical case

observations ($F(1,687)= 19.94, p<.001, \eta_p^2=.028$), outcome measures ($F(1,687)= 50.48, <.001, \eta_p^2=.068$) and clinical guidelines ($F(1,687)= 4.48, p=.035, \eta_p^2=.006$). CB practitioners were also likely to use supervision less frequently than other therapists ($F(1,687)= 9.89, p=.002, \eta_p^2=.014$). There was no association between theoretical orientation and the frequency with which therapists stated that they used their personal experience with clients ($F(1,687)= 2.71, p=.100, \eta_p^2=.004$) or peer discussion ($F(1,687)= 0.085, p=.770, \eta_p^2<.001$) to inform their practice.

Hypothesis 2c. NHS therapists will use research more frequently than therapists who do not work in the NHS when making clinical decisions. A third MANOVA was used to test whether therapists working in the NHS were more likely to use research to make clinical decisions than therapists working outside the NHS. A significant impact of working in the NHS was found (*Hotelling's Trace*=.049, $F(8,680)=4.17, p<.001, \eta_p^2=.047$). Therapists working in the NHS were likely to use the following sources more frequently than other therapists: empirical evidence from controlled trials ($F(1,687)= 29.41, p<.001, \eta_p^2=.041$), case studies ($F(1,687)= 12.74, p<.001, \eta_p^2=.018$) and outcome measures ($F(1,687)= 10.03, p=.002, \eta_p^2=.014$). There were no significant differences between NHS therapists and other therapists in the frequency with which they stated they would use: their personal experience with clients ($F(1,687)= 0.53, p=.465, \eta_p^2=.001$), supervision ($F(1,687)= 0.03, p=.866, \eta_p^2<.001$), peer discussion ($F(1,687)= 3.14, p=.077, \eta_p^2=.005$), popular books ($F(1,687)= 1.51, p=.219, \eta_p^2=.002$) and clinical case observations ($F(1,687)= 1.15, p=.284, \eta_p^2=.002$). Whether or not NHS therapists were more likely to use guidelines was assessed using a Mann-Whitney U test as this variable failed to meet the assumption of homoscedascity and was removed from the MANOVA described above. The results showed that NHS therapists were significantly more likely to use clinical guidelines than other therapists (*Mann-Whitney U*=36865, $Z=3.35, p=.001, r=.127$).

Fifty-five of the therapists who stated they worked in the NHS reported that they worked in an IAPT service (30.2%). To test whether NHS therapists were only more likely to use research because IAPT therapists were using research, a Mann-Whitney test was used to investigate the extent to which IAPT therapists used research from controlled studies compared to other NHS therapists. No significant difference was found (*Mann-Whitney* $U=2921.5$, $Z=0.394$, $p=.694$, $r=.030$).

Similarly, only a small number of therapists stated that they worked exclusively in the NHS ($n=37$). The majority of those who worked in the NHS also worked in private practice ($n=145$). To test whether these groups differed in their use of research, a Mann-Whitney test was used to compare the extent to which therapists who only worked in the NHS used research from controlled studies compared to therapists who worked in both the NHS and private practice. No significant difference was found (*Mann-Whitney* $U=1923.5$, $Z=0.956$, $p=.339$, $r=.073$).

Hypothesis 3. Both CB practitioners and therapists working in the NHS will have more favorable attitudes toward research than other therapists.

Two variables had significant missing data (47% and 74% of responses) and were not entered into the regression. These missing data are indicated with an asterisk in Table 1. Respondents' answers to the questions were totaled to create the Research Attitudes Index which was found to be normally distributed (Kolmogorov-Smirnov (450)=.035, $p=.200$).

A multiple linear regression was used to investigate if a therapist's theoretical orientation and whether or not they work in the NHS, influenced their attitudes toward research. This model was found to explain 35.0% of the variance in Research Attitudes Index scores (adjusted $R^2 = .339$) and was significantly better at predicting scores than a model that just contained the constant ($F(6,343)= 30.782$, $p<.001$). The analysis shows that when demography was considered, CB practitioners ($B=15.91$, *Lower CI*=13.02, *Upper CI*=18.80,

$p < .001$) and NHS therapists were still more likely to have favorable research attitudes ($B = 2.59$, $Lower\ CI = 0.21$, $Upper\ CI = 4.98$, $p = .033$). Older therapists were likely to have less favorable research attitudes ($B = -0.18$, $Lower\ CI = -0.32$, $Upper\ CI = -0.05$, $p = .007$). Gender ($B = 0.08$, $Lower\ CI = -0.39$, $Upper\ CI = 4.60$, $p = .097$), years of clinical experience ($B = -0.02$, $Lower\ CI = -0.18$, $Upper\ CI = 0.13$, $p = .732$) and hours of therapy practiced per week ($B = -0.04$, $Lower\ CI = -0.20$, $Upper\ CI = 0.08$, $p = .400$) had no significant effect on research attitudes. Casewise diagnostics indicated that there were no residuals larger than one would expect. The tolerance and Variance Inflation Factor (VIF) statistics indicated that multicollinearity was not an issue with these data ($1.075 < all\ VIFs < 1.445$; $.692 < all\ tolerances < .930$).

Discussion

The findings of this study are consistent with previous data demonstrating that research only plays a minor role in influencing therapists' choice of theoretical orientation and clinical decision-making. When choosing their theoretical orientation, therapists reported that they were more likely to rely on their intuition, clinical training and personal experience with therapy (either received or given) than research. This study also found that self-identified CB practitioners were more likely to use research evidence to choose their theoretical orientation. These results fit with Stewart and Chambless's (2007) findings that CB practitioners are more likely to use research to inform their choice of theoretical orientation than therapists of other orientations.

The finding that, generally, clinicians prefer to rely on clinical experience rather than research to inform treatment decisions replicates previous studies (Beutler et al., 1993; Beutler, Williams, Wakefield, & Entwistle, 1995; Morrow-Bradley & Elliott, 1986; Stewart & Chambless, 2007). Unlike previous surveys, this study found that therapists considered supervision to be significantly more important than clinical experience. The studies

undertaken by Beutler and colleagues (1993; 1995) and Stewart and Chambless (2007) did not investigate whether therapists considered supervision to be an important factor in making clinical decisions. These factors were considered by Morrow-Bradley and Elliott (1986), and Safran and colleagues (2011), neither of whom found supervision to be as important as clinical experience.

Interestingly, supervision was reported to be used more frequently by non-CB practitioners. This finding might also explain why the current study found that supervision was the most important factor in clinical decision-making compared to Safran and colleagues' (2011) and Stewart and Chambless's (2007) studies. These studies had a greater proportion of CB practitioners than the current study. In this study 16% of respondents stated that they were CB practitioners compared to 20% in Safran and colleagues' study and 45% in Stewart and Chambless's study. This result indicates that supervision may be a way to reach therapists who may not be currently practicing ESTs. The way in which trainers and supervisors could be encouraged to value and discuss research evidence with trainees and supervisees, and whether this will increase its likelihood of impact on practice is not clear. Research on evidence-based supervision is sparse (Beidas & Kendall, 2010), but there is some evidence demonstrating that supervision based on acceptance and commitment training can increase the likelihood of therapists implementing ESTs (Luomas et al., 2007; Varra, Hayes, Roget & Fisher, 2008). In the IAPT program, supervisors are given additional University-based training according to a national curriculum that emphasizes the importance of ESTs and research more generally. Training supervisors to use these interventions may increase the implementation of research evidence into practice, but challenges in terms of time, interest and funding still remain.

Stewart and Chambless (2007) did not report whether there were any differences between theoretical orientations in terms of therapists' use of personal experience with clients

when making clinical decisions. This study found that CB practitioners were no more likely to use their personal experience with their clients when making clinical decisions than other therapists. This finding suggests that CB practitioners do not feel they undervalue their own clinical experience when using research and integrate both research and clinical experience when making clinical decisions. Such integration is consistent with original descriptions of evidence based medicine (Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996), rather than seeing the choice between the use of research and the use of clinical experience as mutually exclusive.

Similar to Stewart and Chambless's (2007) findings, this study found that therapists reported popular books to be the least important source when making clinical decisions, unlike previous work by Beutler and colleagues (1993, 1995). The current study found that CB practitioners were more likely to report that they used popular books to aid their clinical decision-making than other therapists. This means that popular books may be a more effective way of keeping CB practitioners up to date with research than it would be for other therapists. The finding that non-CB practitioners used outcome measures less often than CB practitioners replicates Hatfield and Ogles's work (Hatfield & Ogles, 2007). The benefits of using outcome measures in treatment have been demonstrated across many theoretical orientations (Hannan et al., 2005; Lutz et al., 2006). Overall, self-identified CB practitioners were significantly more likely to use external sources, such as case studies, controlled studies, outcome measures, clinical case observations, and clinical guidelines in clinical decision-making; other therapists relied more on their own or their supervisors' experiences. The sample as a whole reported that their past experience as patients was a strong influence on their choice of initial theoretical orientation. This replicates previous work (Pope & Tabachnick, 1994; Orlinsky et al., 2001). However, Macran and Shapiro (1998) reviewed nine studies that looked at the link between receiving therapy and patient outcomes. They

found no conclusive link between having received psychological treatment and having better patient outcomes.

Work by Aarons (2004) has found that therapists who state that they have less favorable attitudes towards the use of ESTs are less likely to adopt them, despite any requirements by the organization in which they work. In this study clinicians working in the NHS were more likely to use research when making clinical decisions and had more favorable attitudes toward research than therapists working outside the NHS. It is not clear whether research-focused clinicians are moving to the NHS or if the NHS is training therapists to become more research focused, as this was a cross sectional study. Nonetheless, the results do suggest that the emphasis in the NHS on ESTs is associated with therapists with a greater inclination to use research compared to those working outside the organization. IAPT therapists, who were trained specifically to deliver ESTs (Clark, 2011), were no more or less likely to use research than other NHS therapists. This finding suggests that there is a broader reason why therapists in the NHS are more likely to use research than purely because there has been a recent initiative to increase their use across English mental health services.

In this study older therapists were found to be less favorable toward research than younger therapists, even once the number of years of experience that therapists had was controlled for. This replicates a finding by Aarons and Sawitzky (2006) that found that older therapists were more likely to perceive evidence based practice as not clinically useful and less important than clinical experience.

The present study has a number of limitations. The absolute sample size in this study compares favorably to previous work (Beutler et al., 1993; Safran et al., 2011; Stewart & Chambless, 2007). The response rate for the study was 18.5%, which could mean that there was a selection bias in the results. The response rate compares favorably to Safran and colleagues' study (2011), which had a response rate of 12%, but unfavorably to previous

studies by Stewart and Chambless (2007), which had a response rate of 25%.

Another limitation of this study is that personality was not considered as a factor in therapists' use of research, or their choice of theoretical orientation. In a recent study of 46 therapists, CB practitioners were reported as less angry and impulsive than psychodynamic or humanistic therapists, but less open to their feelings and the values of others (Boswell, Castonguay & Pincus, 2009). However, the choice of orientation for psychodynamic psychotherapists may be more dependent on their training than their personality (Buckman & Barker, 2010). Further work could be undertaken to investigate the association between personality variables and theoretical orientation, clinical decision-making and the influence of the workplace.

This study used questions based on those in Stewart and Chambless's study (2007). Therapists could have been asked about a broader range of research sources which would have potentially led to further understanding about what type of research therapists prefer. For example, therapists could be asked whether they prefer studies that had no exclusion criteria versus studies that had a high number of exclusion criteria, or studies reporting treatments with unified protocols or individualized treatment manuals, or more process-oriented research. This would be an interesting avenue for further exploration.

Likewise, the theoretical orientations that therapists used to describe themselves could have been broken down into further categories. This is a limitation for two reasons. First, therapists may feel that their choice may not accurately reflect their practice, although this was mitigated by the inclusion of an open text box. Secondly, some types of psychodynamic treatments, like Brief Psychodynamic Therapy, have been shown to be efficacious in the treatment of depression (NICE, 2009; Shedler, 2010), but other studies have found that some types of psychodynamic therapy may be harmful to patients with schizophrenia (Mueser & Berenbaum, 1990). If the study had asked psychodynamic therapists which specific types of

treatment they use, it may have been possible to establish with more accuracy whether therapists who practice ESTs are more likely to use research to inform their clinical decisions. Such a distinction would have the disadvantage of leading to a large number of groups that would have reduced the power of the analyses.

In the study therapists were not asked about their reasons for their limited use of research. A follow up qualitative study has been conducted to investigate why therapists prefer certain sources of information, which offers some insights into ways that could improve dissemination of research into practice (Gyani, Shafran, Rose & Lee, submitted). This follow up study also provided insight into what therapists considered useful research. Gyani and colleagues found that therapists' objections are based on their beliefs about the translation of research into practice, but they also have objections to the tools used to disseminate research.

Conclusions

The current study aimed to investigate whether research is used to guide therapists' choice of theoretical orientation and the extent to which research is used to inform clinical decisions. Therapists reported that they used research less frequently than other sources of information when making clinical decisions. CB practitioners were more likely to use research than therapists of other theoretical orientations and not feel that they compromised their use of clinical experience by using research to inform their practice. Furthermore, therapists that worked in the NHS were more likely to use research to inform their practice than other therapists.

The exclusive use of clinical experience could lead therapists to use treatments that are not optimally effective (Stobie et al., 2007) and could ultimately lead to worse patient outcomes (Gyani, Shafran, Layard & Clark, 2013). This study provided some positive new

ideas for encouraging therapists to use research in their clinical practice. In particular, the data indicated the importance of supervision. Special supervision sessions for non-CB practitioners could be used to discuss the relevance of research to clinical decision-making. For self-identified CB practitioners, popular books were felt to be important and therefore could be used to keep therapists up to date with research findings to avoid therapist drift. The finding that NHS therapists were more likely to use research to inform their practice highlights that the organization in which one works can have an impact on the use of research to inform practice and highlights that having an organization that mandates the use of evidence may increase the quality of care that patients receive. In conclusion, the study indicates that therapists continue to use their personal experience in clinical decision-making more than research data and that much remains to be done to bridge the gap between science and practice.

References:

- Aarons, G. A. (2004). Mental health provider attitudes toward adoption of evidence-based practice: The Evidence-Based Practice Attitude Scale (EBPAS). *Mental health services research*, 6(2), 61-74.
- Aarons, G. A. & Sawitzky, A. C. (2006). Organizational culture and climate and mental health provider attitudes toward evidence-based practice. *Psychological Services*, 3(1), 61-72.
- Aarons, G. A., Cafri, G., Lugo, L., & Sawitzky, A. (2012). Expanding the domains of attitudes towards evidence-based practice: The Evidence based practice attitude scale-50. *Administration and Policy in Mental Health and Mental Health Services Research*, 39(5), 331-340.
- Baker, T. B., McFall, R. M., & Shoham, V. (2008). Current Status and Future Prospects of Clinical Psychology. *Psychological Science in the Public Interest*, 9(2), 67-103. doi: 10.1111/j.1539-6053.2009.01036.x
- Beutler, L. E., Williams, R. E., & Wakefield, P. J. (1993). Obstacles to disseminating applied psychological science. *Applied and Preventive Psychology*, 2(2), 53-58.
- Beutler, L. E., Williams, R. E., Wakefield, P. J., & Entwistle, S. R. (1995). Bridging scientist and practitioner perspectives in clinical psychology. *American Psychologist*, 50(12), 984-994.
- Beidas, R. S. & Kendall, P. C. (2010) Training Therapists in Evidence-Based Practice: A Critical Review of Studies From a Systems-Contextual Perspective. *Clinical Psychology*. 17(1): 1–30. doi:10.1111/j.1468-2850.2009.01187.x.
- Boswell, J. F., Castonguay, L. G., & Pincus, A. L. (2009). Trainee theoretical orientation: Profiles and potential predictors. *Journal of Psychotherapy Integration*, 19(3), 291-312.
- Buckman, J. R., & Barker, C. (2009). Therapeutic orientation preferences in trainee clinical

- psychologists: Personality or training? *Psychotherapy Research*, 20(3), 247-258. doi: 10.1080/10503300903352693
- Chambless, D. L., & Hollon, S. D. (1998). Defining Empirically Supported Therapies. *Journal of Consulting and Clinical Psychology*, 66(1), 7-18.
- Chorpita, B. F., Daleiden, E. L., Ebesutani, C., Young, J., Becker, K. D., Nakamura, B. J., .Phillips, L., Ward, A., Lynch, R. & Trent, L. (2011). Evidence- Based Treatments for Children and Adolescents: An Updated Review of Indicators of Efficacy and Effectiveness. *Clinical Psychology: Science and Practice*, 18(2), 154-172.
- Clark, D. M. (2011). Implementing NICE guidelines for the psychological treatment of depression and anxiety disorders: The IAPT experience. *International Review of Psychiatry*, 23(4), 318-327. doi: 10.3109/09540261.2011.606803
- Dawes, R. M., Faust, D., & Meehl, P. E. (1989). Clinical versus actuarial judgment. *Science*, 243(4899), 1668-1674.
- Department of Health. (2011). Operational guidance to the NHS – extending patient choice of provider. London. Retrieved from <https://www.gov.uk/government/publications/operational-guidance-to-the-nhs-extending-patient-choice-of-provider--2> on the 3rd October 2013
- Dobson, K., & Beshai, S. (2013). The theory-practice gap in cognitive behavioral therapy: Reflections and a modest proposal to bridge the gap. *Behavior Therapy*. doi: <http://dx.doi.org/10.1016/j.beth.2013.03.002>
- Grove, W. M., Zald, D. H., Lebow, B. S., Snitz, B. E., Nelson, C., & Snitz, B. E. (2000). Clinical Versus Mechanical Prediction : A Meta-Analysis *Psychological assessment*, 12(1) 19-30.
- Gyani, A., Shafran, R., Layard, R., & Clark, D. M. (2013). Enhancing recovery rates: Lessons from year one of IAPT. *Behaviour research and therapy*, 51(9), 597-606. doi:

<http://dx.doi.org/10.1016/j.brat.2013.06.004>

- Gyani, A., Shafran, R., Rose, S. & Lee, M.J. (2013) *A qualitative investigation of therapists' attitudes towards research: Horses for courses?* Manuscript submitted for publication.
- Hannan, C., Lambert, M. J., Harmon, C., Nielsen, S. L., Smart, D. W., Shimokawa, K., & Sutton, S. W. (2005). A lab test and algorithms for identifying clients at risk for treatment failure. *Journal of Clinical Psychology, 61*(2), 155-163.
- Hatfield, D. R., & Ogles, B. M. (2007). Why some clinicians use outcome measures and others do not. *Administration and Policy in Mental Health and Mental Health Services Research, 34*(3), 283-291.
- Hollon, S. D., & Ponniah, K. (2010). A review of empirically supported psychological therapies for mood disorders in adults. *Depression and anxiety, 27*(10), 891-932.
- Insel, T. R. (2010). Translating Scientific Opportunity Into Public Health Impact. *Archives of General Psychiatry, 66*(2), 128-133.
- Layard, R., Clark, D., Knapp, M., & Mayraz, G. (2007). Cost-benefit analysis of psychological therapy. *National Institute Economic Review, 202*(1), 90-98. doi: 10.1177/0027950107086171
- Luoma, J., Hayes, S. C., Twohig, M., Roget, N., Fisher, G., Padilla, M., Bissett, R. & Kohlenberg, B. Augmenting continuing education with psychologically focused group consultation: Effects on adoption of group drug counseling. *Psychotherapy: Theory, Research, Practice, Training 2007*;44:463–469.
- Lutz, W., Lambert, M. J., Harmon, S. C., Tschitsaz, A., Schürch, E., & Stulz, N. (2006). The probability of treatment success, failure and duration—What can be learned from empirical data to support decision making in clinical practice? *Clinical psychology & psychotherapy, 13*(4), 223-232.
- National Institute for Health and Clinical Excellence. (2009) Depression: the treatment and management of depression in adults (update) www.nice.org.uk/CG90.

- Noar, S. M., Benac, C. N., & Harris, M. S. (2007). Does tailoring matter? Meta-analytic review of tailored print health behavior change interventions. *Psychological Bulletin*, *133*(4), 673-693.
- Macran, S. & Shapiro, D. A. (1998). The role of personal therapy for therapists: A review. *British Journal of Medical Psychology*, *71* (1), 13-25. doi: 10.1111/j.2044-8341.1998.tb01364.x
- Morrow-Bradley, C., & Elliott, R. (1986). Utilization of psychotherapy research by practicing psychotherapists. *American Psychologist*, *41*(2), 188-197.
- Mueser, K. T., & Berenbaum, H. (1990). Psychodynamic treatment of schizophrenia: is there a future? *Psychological Medicine*. *20* (2), 253-262.
- Ogilvie, A. J., Abreu, I., & Safran, J. D. (2009). What findings do psychotherapy researchers use in their own practice? A survey of the Society for Psychotherapy Research. *The New School Psychology Bulletin*, *3*(2).
- Öst, L.-G. (2008). Cognitive behavior therapy for anxiety disorders: 40 years of progress. *Nordic Journal of Psychiatry*, *62*(S47), 5-10.
- Rector, N. A., & Beck, A. T. (2001). Cognitive behavioral therapy for schizophrenia: an empirical review. *The Journal of nervous and mental disease*, *189*(5), 278-287.
- Russell, G. M., Szmukler, G. I., Dare, C., & Eisler, II. (1987). An evaluation of family therapy in anorexia nervosa and bulimia nervosa. *Archives of general psychiatry*, *44*(12), 1047-1056.
- Sackett, D. L., Rosenberg, W. M. C., Gray, J. A. M., Haynes, R. B., & Richardson, W. S. (1996). Evidence based medicine: what it is and what it isn't. *British Medical Journal*, *312*(7023), 71-72.
- Safran, J. D., Abreu, I., Ogilvie, J., & DeMaria, A. (2011). Does Psychotherapy Research Influence the Clinical Practice of Researcher–Clinicians? *Clinical Psychology: Science and Practice*, *18*(4), 357-371.
- Shafran, R., Clark, D. M., Fairburn, C. G., Arntz, A., Barlow, D. H., Ehlers, A., Freeston, M., Garety, P.A., Hollon, S.D., Ost, L.G., Salkovskis, P.M., Williams, J.M.G & Wilson, G.

- T. (2009). Mind the gap: Improving the dissemination of CBT. *Behaviour Research and Therapy*, 47(11), 902-909. doi: 10.1016/j.brat.2009.07.003
- Shedler, J. (2010). The efficacy of psychodynamic psychotherapy. *American Psychologist*, 65(2), 98-109.
- Stewart, R. E., & Chambless, D. L. (2007). Does Psychotherapy Research Inform Treatment Decisions in Private Practice ? *Journal of Clinical Psychology*, 63(3), 267-281.
- Stewart, R. E., Stirman, S. W., & Chambless, D. L. (2012). A qualitative investigation of practicing psychologists' attitudes toward research-informed practice: Implications for dissemination strategies. *Professional Psychology: Research and Practice*, 43(2), 100-109.
- Stobie, B., Taylor, T., Quigley, A., Ewing, S., & Salkovskis, P. M. (2007). "Contents May Vary": A Pilot Study of Treatment Histories of OCD Patients. *Behavioural and Cognitive Psychotherapy*, 35(03), 273-282. doi: 10.1017/s135246580700358x
- Varra, A. A., Hayes, S. C., Roget, N., & Fisher, G. (2008). A randomized control trial examining the effect of acceptance and commitment training on clinician willingness to use evidence-based pharmacotherapy. *Journal of Consulting and Clinical Psychology*, 76(3), 449-558.
- Waller, G. (2009). Evidence-based treatment and therapist drift. *Behaviour Research and Therapy*, 47(2), 119-127. doi: 10.1016/j.brat.2008.10.018
- Zwick, R. (1985). Nonparametric one-way multivariate analysis of variance: A computational approach based on the Pillai-Bartlett trace. *Psychological Bulletin*, 97(1), 148-152.