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Practicing Psychologists' Knowledge of General Psychotherapy Research Findings: Implications for Science–Practice Relations

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If you are a therapist, how knowledgeable are you and how knowledgeable do you need to be about psychotherapy research findings? In this study, the authors examined practicing psychologists' knowledge of general psychotherapy research findings. Results revealed that some psychologists showed excellent familiarity with this body of outcome research, but many did not achieve this standard. Not infrequently, psychologists believed that research findings were less positive than is actually the case, perhaps explaining some of the negativity that practitioners sometimes express toward psychotherapy research. Research knowledge could not be predicted by years graduated, percentage of long-term clients, percentage of time conducting therapy, theoretical orientation, or perceived familiarity with research. The modest familiarity with research findings that therapists, in general, demonstrated may be understood, in part, through examination of the acquisition of research knowledge as a judgment task. The authors explore potential factors that may influence therapists' judgments about the research. In addition, they examine possible relations between research knowledge and therapy outcome and their potential practice implications.

Keywords: familiarity with research, science–practice relations, predictors of knowledge, knowledge–outcome relations

At the Boulder Conference on Graduate Education in Clinical Psychology, sponsored by the American Psychological Association (APA) in 1949, the field of clinical psychology formally committed itself to using science and scientific findings for

guidance of clinical practice (Raimy, 1950). At this convention, researchers underscored the goal of accumulating scientific knowledge to advance understanding of behavior and to guide intervention (this later became known as the “Boulder Model”). Psychologists would function as researchers and practitioners, and research would inform practice. Researchers, in fact, have suggested that many psychologists have attempted to endorse the Boulder model and that the model has been successfully used in the training of students (O’Sullivan & Quevillon, 1992; Thelen & Ewing, 1970). In addition to the Boulder model, other training models were developed subsequently by researchers with a similar aim of achieving a meaningful synthesis between the science and practice of psychology by addressing science–practice issues in the training of psychologists. For example, psychologists in the professional school movement (Peterson, 1976, 1985), as exemplified by APA’s Chicago National Conference on Professional Preparation of Clinical Psychologists (1966; Hoch, Ross, & Winder, 1966) and by APA’s Vail Conference on Professional Education and Training in Psychology (1973; Korman, 1976), addressed diverse practice issues and aimed to strengthen the training of clinical psychologists as practitioners. These multiple psychology-training models (e.g., Boulder model, Vail model) endorse psychologists’ common goal of training practitioners to be knowledgeable about research and capable of applying research in practice. The consensus is that a “scientist–practitioner” or “practitioner–scholar” is not defined by job title or role (in fact, many effective practitioners do not engage in research; see Meltzoff, 1984) but by the integration of science with practice (Belar & Perry, 1992).

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Although upgrading and adjusting practice via research seems obviously meritorious in the abstract, the everyday achievement of integrating research and practice can be deceptively difficult. Others have similarly reiterated the difficulty in bridging the science–practice gap. Concerns, questions, and, sometimes, criticisms have echoed through the decades (Barlow, 1981; Chein, 1966; Raush, 1974; Stirman, Crits-Christoph, & DeRubeis, 2004; Stricker, 1992).

Research–Practice Links in Psychotherapy

In various studies, researchers have examined the integration of research and practice. For example, researchers have indicated that clinicians rely more on discussions with colleagues (Barrom, Shadish, & Montgomery, 1988; Cohen, 1979b; Cohen, Sargent, & Sechrest, 1986; Prochaska & Norcross, 1983) and on experience with clients (Morrow-Bradley & Elliott, 1986) than on research findings to guide practice. In other studies, researchers have shown that clinicians value research and consider their practice to be augmented by research information from workshops, books, and theoretical articles (Beutler, Williams, & Wakefield, 1993; Beutler, Williams, Wakefield, & Entwistle, 1995). Researchers have also suggested that therapists tend to read the research but not as often as researchers do (Cohen, 1979b; Beutler et al., 1993; Beutler et al., 1995; Morrow-Bradley & Elliott, 1986). It seems evident that psychologists cannot integrate research with practice if they lack adequate familiarity with both. However, no study has been conducted in which researchers directly examined practicing psychologists' knowledge of psychotherapy outcome research.

The primary purpose of this study was examination of the extent to which practicing psychologists are familiar with general psychotherapy research findings, whether any therapist variables (e.g., years of experience, relative time spent conducting therapy) are associated with level of research knowledge, and whether self-report of research familiarity correlates with a formal measure of research familiarity. We were most interested in psychologists' familiarity with general psychotherapy research findings rather than their familiarity with more specific, esoteric, or secondary research findings. For example, we were more interested in matters that related to general versus specific treatment effects, such as the average number of sessions needed for achievement of some therapeutic change as opposed to whether, for example, eye movement desensitization and reprocessing (EMDR) compared with psychoanalysis alleviates posttraumatic stress disorder (PTSD) symptoms more quickly or whether hypnosis is effective in retrieving accurate childhood memories.

In determining whether practicing psychologists' responses reflect accurate knowledge of general psychotherapy research findings, we believed that identifying areas in which leading psychotherapy outcome researchers achieve strong consensus would provide a potentially useful, albeit fallible, measure of the state of psychotherapy outcome research.

We therefore created a questionnaire to distribute to psychotherapy outcome researchers that contains a series of psychotherapy assertions. Questionnaire items were chosen on the basis of a comprehensive review of the psychotherapy literature, including findings from seminal studies or meta-analyses on psychotherapy outcome, conclusions from psychotherapy outcome research iden-

tified by Bergin and Garfield (1994, pp. 180–182), and equivocal findings based on the researchers' impressions of psychotherapy outcome research. We sent this questionnaire to the 25 most highly cited researchers in the *Handbook of Psychotherapy and Behavior Change* (4th ed.; Bergin & Garfield, 1994). Using a seven-point Likert scale, the experts indicated how certain they were that the assertions were supported by psychotherapy research (1 = *extreme certainty that the assertion was incorrect*; 4 = *equal certainty that the assertion could be correct or incorrect*; 7 = *extreme certainty that the assertion was correct*; i.e., research showed mixed results supporting the assertion).

After two mailings, 12 usable questionnaires were returned and included in the analysis. We analyzed the experts' responses to determine the level of agreement for the questionnaire items. Agreement, or relative consensus, was defined by the majority response criterion (i.e., items for which the majority of experts endorsed the same rating). Given the sample size of 12, majority response was defined as 6 or greater. If 6 of the 12 participants endorsed the same rating for an item (e.g., 6 participants endorsed a score of 5 on the Likert scale for an item), this indicated a strength of rating endorsement for this item that could not be exceeded by an alternative rating—that is, an alternative rating could, at best, match this if, and only if, all 6 of the remaining participants uniformly endorsed the item with the same alternative rating (e.g., the remaining 6 participants all endorsed a score of 4 on the Likert scale for this item). In such a case, this item would receive two majority responses.

Seven of the 20 questionnaire items satisfied the majority-response criterion—that is, for these 7 items (hereafter referred to as the *consensus items*), at least six of the experts endorsed the same rating for the item (see Table 1). We used the experts' responses to anchor the research questions—that is, to provide a yardstick by which to then measure practicing psychologists' knowledge of the research by having them respond to these same questions. The specific findings from the experts' study are described elsewhere (Boisvert & Faust, 2003).

Practicing Psychologists' Questionnaire

With assistance from the APA Research Directorate, we randomly selected 500 practicing psychologists from the approximately 7,695 members of the American Psychological Association (APA) Division 42 (Psychologists in Independent Practice). Division 42 is the largest APA division and consists primarily of clinical and counseling psychologists, the target group for this research.

A total of 500 members of APA Division 42 were sent a packet containing a cover letter that explained the purpose of the study and ensured confidentiality, the questionnaire, and a postcard to forward to the researchers if the participant was interested in receiving results from the study. After 2 weeks, a reminder postcard was sent to all participants, and after 1 month, a second mailing of the complete packet was sent to all participants.

Within 2 months of the first mailing, 228 of the 500 participants had returned questionnaires, yielding a return rate of 46%. Of the returned questionnaires, 47 were unusable (participants had indicated that their caseload comprised less than 25% adults, returned a blank or incomplete questionnaire, or indicated that they were

Table 1
Items for Which There Was a Majority Response

Consensus item	Majority response	No. of participants who endorsed the majority response
1. The client's social support system is a strong predictor of a client's ability to benefit from therapy.	5	7
2. In general, therapies achieve similar outcome.	6	8
3. Most people achieve some change relatively quickly in therapy.	6	7
4. Many problems respond better to specific therapy techniques compared to non-specific therapy techniques.	3	6
5. Placebo control groups and waitlist control groups are as effective as psychotherapy.	1, 2 ^a	6, 6
6. The longer the therapy, the greater the change.	5	6
7. Therapy is helpful to the majority of clients.	6	8

Note. Scale items: 1 = *extremely certain that the assertion is incorrect*; 4 = *equally certain that the assertion could be correct or incorrect*; 7 = *extremely certain that the assertion is correct*; DK = *don't know*.

^aFor this item, 6 respondents endorsed a 1 and 6 respondents endorsed a 2; thus, the item has two majority responses.

too busy to complete the questionnaire), leaving 181 (36%) usable questionnaires.¹ The sample characteristics closely matched data from the APA Research Office on the membership of Division 42 for gender, highest degree, years graduated, and professional activities (see Table 2).

Measuring Practicing Psychologists' Knowledge of the Research Findings

To address the primary research question concerning psychologists' knowledge of general therapy research findings, we compared the participants' responses with the experts' responses on the seven consensus items. Table 3 provides the experts' means along with the participants' means and standard deviations for the questionnaire items.

Each participant received a difference score for his or her response on each consensus item. This score was the remainder (absolute value) that we got after subtracting the value of their response from the value assigned to the consensus item on the basis of the experts' majority response. It follows that larger numbers reflect larger discrepancies, or poorer matches, between the participants' and the experts' ratings. Mean difference scores (MDSs) for the participants, as a group, were also calculated for each of the consensus items (see Table 4). The lower the MDS, the more concordant the participants' ratings were with the experts' ratings for the particular consensus item.

To determine each subject's level of research knowledge, we calculated a knowledge index for each participant by summing their MDSs across the seven consensus items; lower scores represented closer overall matches, or a greater level of knowledge. Ultimately, each participant received a knowledge index (with a potential range of 0–32), which represented his or her accuracy on the consensus items. The participants' mean knowledge index was 10.15 ($SD = 3.22$) and yielded a normal distribution (range = 2–19, skewness = .14, and kurtosis = –.14), which suggests that, although a fallible measure, the knowledge index successfully

differentiated among levels of research knowledge across the sample. This observation is noteworthy given that this study was our initial attempt to develop an index of research knowledge, which addresses an important prerequisite (i.e., research knowledge) for the successful integration of research into practice.

Varying percentages of participants endorsed the “don't know” (DK) response for the consensus items (see Appendix). These DK responses were included in the analyses of the difference scores as these responses were central to answering the primary question of the study (i.e., how familiar are psychologists with psychotherapy research findings?). The DK responses were assigned a value (i.e., a chance difference score [CDS]) that was the equivalent of chance responding for the item. As displayed in the Appendix, we calculated chance difference scores for each item by assigning a difference score to each of the possible seven rating options per item, summing these values, and dividing the result by 7. For example, for Anchor Item 1, the correct response (i.e., the experts' majority response) was 5; discrepancies were calculated for each of the seven possible responses to Item 1, and the sum of the seven responses was divided by 7 to yield a CDS of 1.86. We used the CDSs to examine the extent to which practitioners' average difference scores varied from chance.

In addition, the mean difference from chance (MDC) and the percentage of respondents who scored below chance responding (BCR) were calculated for each consensus item. We determined the MDC for each item by subtracting the MDS from the CDS. For example, for Anchor Item 1, the MDS was 0.81. This score of 0.81 was subtracted from the CDS for Anchor Item 1 (1.86), yielding a MDC of 1.05. The smaller the MDC, the closer to chance. Negative MDC scores represented BCR. Consensus Items 4 and 6 yielded negative MDC scores, indicating that the majority of participants scored BCR. We determined the BCR by calculating the percentage of respondents who endorsed a response value that

¹ This questionnaire is available upon request from Charles M. Boisvert.

Table 2
Demographics and Practice Characteristics of Psychologists

Characteristic	<i>n</i>	% ^a	Years graduated	% of time providing therapy	% of long-term clients
Gender					
Male	111	61			
Female	69	38			
Missing	1	1			
Degree					
PhD	155	86			
PsyD	15	8			
EdD	10	5			
MA	1	1			
Orientation					
Cognitive	52	29			
Psychodynamic	47	26			
Behavioral	13	7			
Humanistic	11	6			
Interpersonal	12	6			
Family systems	9	5			
Gestalt	2	1			
Other	16	9			
Nonresponders	19	11			
Primary diagnostic group					
Depressive disorders	111	61			
Anxiety disorders	30	17			
Personality disorders	13	7			
Adjustment disorders	8	4			
Substance use disorders	5	3			
Schizophrenia	1	1			
Bipolar disorder	1	1			
Sexual disorders	1	1			
Others	8	4			
Missing	3	2			
<i>M</i>			20.1	65.8	38.0
<i>SD</i>			9.4	24.4	32.1
<i>Mdn</i>			19.0	70.0	25.0
<i>Mode</i>			12.0	80.0	10.0
<i>Range</i>			5–53	10–90	0–100

^a Numbers do not necessarily add to 100% because of rounding.

differed more from the experts' majority response than was expected by chance. For example, for Anchor Item 1, responses that differed more than 1.86 points from the correct answer were considered to be BCR. Sixteen percent of the participants were 2 or more points away from the correct answer for Anchor Item 1 and thus were considered to be below chance responders for that item (see Appendix for CDS, MDC, and BCR scores).

Questionnaire Results

The following are items for which participants demonstrated the greatest familiarity, in order of strength of match: (a) Therapy is helpful to the majority of clients (MDS = 0.78); (b) the client's support system is a strong predictor of the client's ability to benefit from therapy (MDS = 0.81); (c) most people achieve some change relatively quickly in therapy (MDS = 0.85); and (d) placebo control groups and waitlist control groups are as effective as psychotherapy (MDS = 1.14; see Table 4).

However, participants were relatively less familiar with other research findings, which revealed that (a) in general, therapies

achieve a similar outcome (MDS = 1.74); (b) the longer the therapy, the greater the change (MDS = 2.00); and (c) many problems respond better to specific versus nonspecific therapy techniques (MDS = 2.28). On the last two items, the majority scored BCR, suggesting a systematic inaccuracy.

The number of DKs per participant was compared with years since graduation and yielded a correlation of +.11. Essentially, the number of years that psychologists had practiced psychotherapy had little or no relation with their perceived familiarity with psychotherapy research.

Variables That Predicted Knowledge of General Therapy Research Findings

To determine whether research knowledge differed by theoretical orientation, we conducted an analysis of variance (ANOVA). Because of unequal representation of the different theoretical orientations, we collapsed some categories to ensure acceptable group sizes (Keppel, 1991). Theoretical orientations were collapsed into three groups: (a) cognitive-behavioral (35%), (b) psychodynamic

Table 3
Experts' Means and Practitioners' Means and Standard Deviations for the Questionnaire Items

Item	Experts' mean	Practitioners' mean	Practitioners' SD
The client's social support system is a strong predictor of a client's ability to benefit from therapy. ^a	4.90	5.64	0.89
The majority of terminations are client-initiated.	5.70	5.19	1.14
The relationship between the therapist and client is the best predictor of treatment outcome.	5.58	5.38	1.26
Long-term therapy is more effective than brief therapy for the majority of clients.	3.08	3.34	1.57
In general, therapies achieve similar outcome. ^a	6.00	4.46	1.64
Insight is often necessary to achieve lasting change.	3.18	3.25	1.59
People change more due to "common factors" than to "specific factors" associated with therapies.	5.73	5.04	1.35
Most therapists learn more about effective therapy techniques from their experience than from the research.	5.50	5.05	1.34
Paraprofessionals achieve lower success rates in therapy compared with individuals.	2.67	3.93	1.52
Most people achieve some change relatively quickly in therapy. ^a	5.92	5.39	1.01
Dropout rates are equal for brief therapy and long-term therapy.	3.40	3.47	1.47
Most of the gains from therapy occur in the first 10 sessions.	5.92	5.04	1.40
Therapist experience is a strong predictor of outcome.	2.42	4.60	1.45
Many problems respond better to specific therapy techniques compared to non-specific therapy techniques. ^a	3.17	5.23	1.16
Placebo control groups and waitlist control groups are as effective as psychotherapy. ^a	1.50	2.99	1.60
For many clinical problems, outcome of psychotherapy is improved if medications are used.	3.58	5.15	1.48
The longer the therapy, the greater the change. ^a	5.08	3.19	1.46
Therapy is helpful to the majority of clients. ^a	6.33	5.44	1.03
Graduate school training does not make a therapist more effective.	4.40	3.32	1.53
Approximately 10% of clients get worse as a result of therapy.	5.67	4.63	1.59

Note. Scale items: 1 = extremely certain that the assertion is incorrect; 4 = equally certain that the assertion could be correct or incorrect; 7 = extremely certain that the assertion is correct; DK = don't know.

^a Consensus item.

(26%), and (c) humanistic/existential and interpersonal (13%). The remaining 26% of the participants were excluded from the analysis either because they identified an orientation (e.g., eclectic, gestalt) that could not be matched conceptually with one of the other orientations or because they did not list a primary theoretical orientation. A one-way ANOVA indicated that groups with different theoretical orientations did not differ significantly on the knowledge index, $F(2, 132) = 0.43, p > .05$. Interestingly, past research has shown that those with behavioral versus nonbehavioral orientations are more productive in research and publications (Bornstein & Wollersheim, 1978) and that cognitive-behavioral theorists, compared with psychoanalytic theorists, use research

more (Morrow-Bradley & Elliott, 1986). However, despite this and what may be stereotypic perceptions of the "scientific mindedness" of members of different theoretical orientations, no differences in research knowledge were found among the groups.

To determine the extent to which psychotherapy research knowledge could be predicted by other variables, we performed several correlational analyses involving variables such as years graduated; percentage of long-term clients (i.e., clients seen at 20 or more sessions); and percentage of time, relative to other professional activities, spent conducting psychotherapy. The correlation between research knowledge and any of these variables approached zero, and as such, we did not conduct follow-up analyses.

Table 4
Psychologists' Mean Difference Scores, Standard Deviations, and Percentage Endorsing Experts' Majority Response

Item	Difference		
	M	SD	% correct ^a
The client's social support system is a strong predictor of a client's ability to benefit from therapy.	0.81	0.74	33
In general, therapies achieve similar outcome.	1.74	1.43	18
Most people achieve change relatively quickly in therapy.	0.85	0.81	30
Many problems respond better to specific therapy techniques compared to non-specific therapy techniques.	2.28	1.06	06
Placebo control groups and waitlist control groups are as effective as psychotherapy.	1.14	1.39	42 ^b
The longer the therapy, the greater the change.	2.00	1.19	12
Therapy is helpful to the majority of clients.	0.78	0.88	39

^a Expect 14% correct by chance responding.

^b Expect 28% correct by chance responding (item had two majority responses).

Thus, practicing psychologists' knowledge of general psychotherapy research findings could not be predicted by any of these variables.

To measure the match between self-report of research familiarity and an objective measure of familiarity, we calculated correlations between self-reported research familiarity and knowledge index scores. On average, participants indicated that they were moderately familiar with the general body of psychotherapy literature ($M = 3.79$, $SD = 1.13$) and moderately familiar with outcome literature ($M = 3.73$, $SD = 1.33$). The knowledge index correlated $-.09$ with perceived familiarity with the general body of psychotherapy literature and $.02$ with perceived familiarity with psychotherapy outcome literature. Thus, perceived familiarity with psychotherapy research did not predict measured familiarity.

The small number of consensus items identified in the experts' study restricted the domain of knowledge that was used as a yardstick by which to measure psychologists' familiarity with research. As such, it is unclear if the findings are representative of practicing psychologists' overall knowledge base. Psychologists may have been familiar with other research findings that pertained more specifically to their practice (e.g., differences between flooding and systematic desensitization in treating agoraphobia). Additionally, it is important to note that the general research findings examined in this study may or may not hold in specific areas of practice such as in substance abuse treatment. The research knowledge of the psychologists in this study may not represent the knowledge of the average practitioner. The questionnaire items pertained to adult populations, and it is unclear the extent to which research on children and adolescents would yield similar findings and the extent to which clinicians who work with these populations would display a different level of research knowledge.

Implications for Practice: Exploring the Potential Relations Between Research Knowledge and Therapy Outcome

We designed the investigation within the context of discovery, intending it to be descriptive rather than inferential. Our primary aim was to determine practitioners' knowledge of some general psychotherapy research findings. Our aim was not to make inferences about the extent to which the specific knowledge measured in this study predicts therapy outcome or therapist competency. Additionally, we measured familiarity with general psychotherapy research findings rather than familiarity with more specific research findings, thus making generalization of these findings across settings and across practitioners tenuous. For example, practitioners who work with specific clinical populations such as clients with opiate addictions, bipolar disorder, or eating disorders may be familiar with the literature in these specific areas yet not necessarily familiar with more general psychotherapy research findings.

Psychology training models have consistently emphasized the importance of science informing practice. A formidable challenge for all practitioners is realizing of the ultimate goal of the science–practice interface, which is acquisition of an adequate knowledge base and demonstration of the capability of knowing when and how to apply this knowledge in practice. In this article, we review the potential implications of our findings by discussing the possi-

ble reasons why psychologists, as a group, showed only modest familiarity with some general psychotherapy research findings. We examine this issue by suggesting that the acquisition of knowledge is a judgment task. We then explore possible relations between research knowledge and therapy outcome and examine potential practice implications of such relations. By exploring the conceptual underpinnings of the knowledge–practice interface, we hope to assist clinicians in identifying more carefully some potential ways that knowledge may or may not influence practice outcomes.

The manner in which psychologists formulate opinions about research findings may help explain their differential familiarity with, or beliefs about, psychotherapy research findings. Interpreting a body of literature requires the clinician to render a judgment. Clinicians may arrive at an opinion about the research in different ways. They may choose to review different studies and independently interpret the results, seek an interpretation of the literature by an expert, ask colleagues for opinions, compare the match between their experiential impressions and research impressions, or seek other guides. Thus, there are likely to be divergent opinions about what researchers have concluded because of the absence of clear guides to assist clinicians in interpreting the research and because of clinicians' differential exposure to the research.

Factors That May Influence Therapists' Beliefs About the Research

Interestingly, participants tended to underestimate strong research support for certain positive therapy findings. For example, participants tended to be only moderately certain that research supported the assertion that “therapy is helpful to the majority of clients.” In addition, participants tended to underestimate the relative advantage of treatment versus nontreatment control groups. Practicing psychologists may have believed that, given the strained alliance between research and practice (Beutler et al., 1995; Goldfried & Wolfe, 1996) and ideological differences between practitioners and researchers (Bibace & Walsh, 1982; Chein, 1966), researchers would necessarily show that the measured benefits of therapy are more modest than are the perceived benefits (i.e., practitioners' experiential impressions of the benefits of therapy).

Participants tended to be incorrect about research that pertained to the relative benefits of common versus specific factors, the differential effects of therapy approaches, and the relationship between therapy duration and outcome. Participants may have been incorrect about some of these findings due to systematic biases. For example, many believed that research supported the differential effects of specific techniques as compared with general treatment factors. An availability bias (Tversky & Kahneman, 1973) may be operating in that practitioners are likely to use specific techniques and thus can easily recall instances when such techniques seemed beneficial. For example, a practitioner may routinely prescribe relaxation exercises to clients. A practitioner who successfully treats clients with such techniques may tend to associate these specific interventions with the outcome and may potentially overlook the possibility that other interventions (e.g., encouragement; empathic listening) may have been equally effective. Alternatively, practitioners often do not have the opportunity to learn whether clients would have done as well with different techniques or with less specific techniques. As such, treatment

success can easily be falsely associated with specific techniques and can consequently lead to belief in the superiority of specific techniques compared with nonspecific techniques.

These misimpressions, in turn, may lead practitioners to selectively review research and arrive at a biased opinion about the research. Such judgments may represent a confirmatory bias whereby practitioners seek confirmatory evidence (see Arkes, 1981; Faust, 1986; Nisbett & Ross, 1980) or seek research that supports their view and subsequently disregard disconfirmatory evidence (e.g., research showing that other approaches are equally effective). Practitioners may even evaluate the scientific merit of research on the basis of the extent to which the research reveals the superiority of their approach (Cohen, 1979b, 1980; Sargent & Cohen, 1983) or may be more inclined to read research that supports their treatment approach (Cohen, 1979a, 1980; Sargent & Cohen, 1983).

Research Knowledge: Its Potential Relation to Therapy Outcome

Does research knowledge affect outcome? To explore and ultimately answer this question, we find it useful to consider the potential relations between research knowledge and therapy outcome. The potential relation may fall into one of six categories if research knowledge is conceptualized as having three levels (correct knowledge, incorrect knowledge, and no knowledge) and if therapy outcome is conceptualized as having two levels (favorable vs. unfavorable):

1. Correct research knowledge—Favorable therapy outcome
2. Incorrect research knowledge—Favorable therapy outcome
3. No research knowledge—Favorable therapy outcome
4. Correct research knowledge—Unfavorable therapy outcome
5. Incorrect research knowledge—Unfavorable therapy outcome
6. No research knowledge—Unfavorable therapy outcome

Having research knowledge does not answer the question of whether research and practice can be integrated or if familiarity with research breeds use. However, having research knowledge seems important to the extent that alternative forms of knowing (i.e., having incorrect knowledge or no knowledge) are probabilistically linked to differential outcomes.

Exploring Possible Knowledge–Outcome Relations: Potential Practice Implications

There are likely to be situations in which the relative impact of no research knowledge, incorrect research knowledge, and correct research knowledge is equal. Consider that Clinician A incorrectly believes that psychoanalytic approaches are superior to other approaches; Clinician B correctly believes that, in general, all therapies are equal; and Clinician C does not know whether therapies lead to differential outcomes. Clinician A provides psychoanalytic therapy to all clients; Clinician B uses multiple approaches with clients; and Clinician C describes the different approaches to clients and lets them choose. Overall, the outcomes in all three cases are likely to be the same if, after all, a broad array of approaches are equally effective.

There may be situations in which no knowledge compared with either correct knowledge or incorrect knowledge produces less favorable outcomes in therapy. For example, if a therapist does not know that most clients, in general, achieve some change relatively quickly in therapy (Howard, Kopta, Krause, & Orlinsky, 1986; Kopta, Howard, Lowry, & Beutler, 1994), he or she may be less likely to encourage clients to continue in therapy, when, for example, clients may be considering ending therapy prematurely after the first few sessions due to negative emotional reactions. The therapist may be more likely to terminate therapy prematurely with these tentative clients than a therapist who knows the literature on dose–response relations (Barkham et al., 2006; Howard et al., 1986; Kopta, 2003; Kopta et al., 1994) or one who has an incorrect belief such as “all clients need long-term therapy.”

There are also likely to be situations in which the relative impact of no knowledge versus incorrect knowledge is equal. For example, a clinician who does not know, and one who does not believe, that therapy can lead to negative effects may be equally likely to make misattributions about the client’s distress and continue to cause harm by continuing therapy. However, this may hold only to the extent that not knowing prevents one from altering one’s behavior or entertaining alternative explanations. For example, a clinician who does not initially realize that therapy can be harmful may eventually recognize this possibility because of the lack of alternative explanations for negative changes in a client’s behavior. This recognition may subsequently lead to improved practice by, for example, facilitating termination or adjusting the therapy. However, this outcome or change in judgmental habits is less likely to occur if a clinician firmly holds the incorrect belief that therapy cannot be harmful. However, it does seem clear that a lack of research knowledge could negatively affect practice. For example, a significant number of participants did not know (28%) or were mistaken about (30%) research showing that approximately 10% of clients experience negative effects from therapy. Thus, many clinicians may be practicing without this knowledge and contributing to various possible outcomes such as arriving at false attributions regarding the cause of clients’ distress and providing clients with inadequate information about the potential risks and benefits of therapy.

Given the lack of research examining the relation between research knowledge and therapy outcome, the extent to which knowledge predicts outcome is undetermined. Currently, researchers suggest that certain therapist variables (e.g., empathy, ability to develop a strong therapeutic alliance) may correlate most strongly with outcome (Norcross, 2002). These variables often suggest that “the therapist as a person” is a primary change agent in the therapy relationship. However, the extent to which research knowledge is interactive with these person variables is undetermined.

Continuing the Science–Practice Dialogue

Although fundamental differences may exist between the science and practice of psychology, a certain degree of agreement about the knowledge base in the field is to be expected. To pursue questions concerning the application of science to the practice of psychotherapy, we must determine the extent to which psychologists are familiar with research findings and the extent to which they agree about findings that have potential practice implications.

Assessing psychologists' familiarity with the research, as we sought to do in this study, appears to be a potentially important component in achieving a more meaningful and productive science–practice dialogue. Although familiarity with research may or may not lead to improved practice, this study raises questions about the relative consequences of clinicians having correct research knowledge versus incorrect research knowledge (i.e., false beliefs) versus a lack of research knowledge. Answers may depend on the extent to which these different states of knowing influence behavior, affect practice habits, and ultimately lead to differential outcomes.

Although familiarity with research does not ensure its integration with practice, lack of familiarity precludes the possibility (Raimy, 1950). Although practitioners may argue that researchers do not produce relevant research or provide guides for applying research (Beutler et al., 1993, 1995; Cohen, 1979a; Keeley, Shemberg, & Zaynor, 1988; Morrow-Bradley & Elliott, 1986), practitioners who are not familiar with research may be equally responsible for any potential failures of achieving a successful research–practice synthesis in psychotherapy.

The findings from this study also raise questions about whether familiarity with research is a necessary condition for effective therapy practice. Interestingly, in this study, the experts and practitioners agreed most strongly on the finding that therapy is helpful to the majority of clients. It is unclear the extent to which positive therapy outcomes have been influenced by familiarity with the research, given that the research knowledge of the practitioners in other psychotherapy studies is undetermined. However, if the clinicians in these other outcome studies were not particularly knowledgeable about psychotherapy outcome research and yet still achieved positive outcomes, it suggests that knowledge about psychotherapy outcome research may not be a prerequisite for effective therapy practice. Future research could examine how familiar therapists are with research in their specific area of practice and the extent to which this knowledge predicts therapy outcomes.

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Appendix

Distribution of Psychologists' Difference Scores

Consensus item	% correct	% off by					% DK	MDS	CDS	MDC	% BCR
		1 pt	2 pts	3 pts	4 pts	5 pts					
1	33	38	15	1	0	0	14	0.81	1.86	1.05	16
2	18	32	19	11	9	5	7	1.74	2.26	0.52	25
3	30	47	9	2	1	1	11	0.85	2.26	1.41	4
4 ^a	06	16	22	37	7	0	13	2.28 ^a	1.86 ^a	-0.42 ^a	66 ^a
5	42	14	16	8	4	3	14	1.14	2.14	1.01	15
6 ^a	12	18	23	26	8	0	13	2.00 ^a	1.86 ^a	-0.14 ^a	57 ^a
7	39	37	10	2	2	0	10	0.78	2.26	1.48	4

Note. The totals "% DK" and "% BCR" summed across each item do not necessarily add to 100% because of rounding. DK = don't know; MDS = mean difference score; CDS = chance difference score (difference one would expect by chance); MDC = mean difference from chance; BCR = below chance responding.

^a Items for which mean participants' ratings were below chance responding.

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