Psy.D. Students’ Knowledge of General Psychotherapy Outcome Research Findings

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Abstract
Over six decades of psychotherapy outcome research has suggested that a few major factors consistently account for a majority of the variability observed in therapy outcomes. No research has examined what Psy.D. students know about these important factors, the active ingredients that make therapy “work.” The current cultural context for clinical practice includes managed care and a movement toward empirically supported treatments. In light of this, it was hypothesized that Psy.D. students would overestimate the contribution of specific techniques for therapy outcome. It was further hypothesized that students’ overall knowledge of outcome factors research findings would be low. In general, hypotheses were not supported. When compared to experts, Psy.D. students showed moderate to strong knowledge of outcome factors research findings. However, students significantly underestimated the overall support for therapy as an effective intervention in the literature. As students progressed in their Psy.D. programs, this inaccurate perception increased. Students’ awareness of the historical tension between research and practice may partially explain this finding. Recommendations for improving students’ core knowledge of outcome factors research are given.

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PSY.D. STUDENTS’ KNOWLEDGE OF GENERAL PSYCHOTHERAPY OUTCOME RESEARCH FINDINGS

A DISSERTATION

SUBMITTED TO THE FACULTY

OF

SCHOOL OF PROFESSIONAL PSYCHOLOGY

PACIFIC UNIVERSITY, HILLSBORO, OREGON

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ABSTRACT

Over six decades of psychotherapy outcome research has suggested that a few major factors consistently account for a majority of the variability observed in therapy outcomes. No research has examined what Psy.D. students know about these important factors, the active ingredients that make therapy “work.” The current cultural context for clinical practice includes managed care and a movement toward empirically supported treatments. In light of this, it was hypothesized that Psy.D. students would overestimate the contribution of specific techniques for therapy outcome. It was further hypothesized that students’ overall knowledge of outcome factors research findings would be low. In general, hypotheses were not supported. When compared to experts, Psy.D. students showed moderate to strong knowledge of outcome factors research findings. However, students significantly underestimated the overall support for therapy as an effective intervention in the literature. As students progressed in their Psy.D. programs, this inaccurate perception increased. Students’ awareness of the historical tension between research and practice may partially explain this finding. Recommendations for improving students’ core knowledge of outcome factors research are given.

Keywords: Psy.D. students, psychotherapy outcome research findings.
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INTRODUCTION

Over 60 years of therapy outcome research has suggested that a few major factors consistently account for a majority of the variability observed in therapy outcomes. In order of their relative contribution these are: extra-therapeutic factors, or the client’s attributes and life outside the therapy room; common factors among all therapies such as empathy, dialogue, and goal-setting; expectation effects, or the client’s hope that therapy will be helpful; and specific factors such as techniques (Lambert & Barley, 2002). Although research has continually validated these factors and their relative contribution to therapy outcomes, it is not clear whether this research has found its way home—into graduate school curricula and into the minds of young practitioners of psychology.

Several conditions might contribute to a presentation of the active ingredients of therapy in today’s psychology graduate training that is not accurate or well-rounded. Specifically, a number of social and academic circumstances may lead to an emphasis on specific techniques over the other major outcome factors. The field of psychology, like most health-related fields, has shifted recently toward managed care. This shift has had many effects, and some of them, like an increased awareness of the importance of treatment planning, have been positive. The increased involvement of managed care in clinical decision-making and the adoption of the Health Insurance Portability and Accountability Act (U.S. Department of Health and Human Services, 1996) (HIPAA) in the field of mental health has resulted in a new set of necessary skills for therapists. Therapists must navigate detailed procedures to stay in compliance with HIPAA regulations and often must satisfy the requests of insurance companies in order to get paid for their services. These skills (treatment planning and protocol, HIPAA compliance
issues, detailed clinical record keeping, etc.) are often emphasized in clinical psychology graduate training programs because their relevance for practice in today’s market is high (Daniels & Olivares, 2002). In addition, managed care practices have tended to support the use of empirically supported treatments favored by insurance companies. These treatments tend to utilize specific techniques in therapy.

The identification of efficacious therapy techniques is at the heart of the empirically supported therapies (EST) movement, and proponents of this approach have voiced their opinions strongly in the research and academic communities. Ollendick and Davis (2004) noted that proponents of the EST approach have often called into question the ethics of forgoing ESTs in clinical practice, and these concerns have helped to shape public policy in some organizations. Some state Medicaid programs and the National Institutes of Health now actively encourage and sometimes require therapy practitioners to use ESTs with clients (Carpinello, Rosenberg, Stone, Schwager, & Felton, 2002). Such prominent endorsements of the EST approach may influence perceptions about the value of specific techniques in therapy.

Competition among proponents of different therapeutic modalities for practitioners, for popular exposure in the marketplace, and ultimately, for money, may also contribute to an overvaluation of specific techniques in the therapy process. As Jorgensen (2004) noted:

The current emphasis on “branding” the various schools of psychotherapy, for economic reasons and reasons related to the prevailing cultural zeitgeist, has meant that therapists themselves have tended to put greater weight on specific factors—that is, on those techniques and ingredients that distinguish their particular school from others—even though the common or nonspecific factors probably play a greater role in the outcome of any given therapy. (p.520)
All the conditions discussed above may result in graduate training that emphasizes specific techniques over other important sources of variance for therapy outcomes: extratherapeutic factors, common factors, and expectancy effects.

The purpose of this study is to help ascertain the degree to which clinical psychology graduate students are familiar with the basics in their field—that is, whether they are knowledgeable about all the major factors that contribute to positive therapy outcomes. One main hypothesis of this study is that current graduate students in clinical psychology may overestimate the importance of specific factors (techniques) for therapy outcomes, while underestimating the contribution of the other major factors. It is hypothesized that students will identify that their academic coursework tends to emphasize specific factors over so-called common factors, expectation effects, and extratherapeutic factors that contribute to therapy outcomes. Knowledge of students’ understanding of general psychotherapy outcome research findings may prove useful in future training of psychology practitioners.

In the next section background literature relevant to this study will be discussed, including an overview of research on the major factors that affect therapy outcomes and a discussion of the different training models used by Psy.D. and Ph.D. graduate programs in psychology. In addition, three specific studies that inspired and helped to shape the study reported in this paper will be reviewed.
At the 1973 Vail conference the profession of clinical psychology established the "practitioner-scholar" model of training for Psy.D. doctoral students. The Vail model emphasizes clinical education for psychologists in training that is informed by the latest research in the field. This model differs from and is in reaction to the Boulder model that places more importance on research training and experience and is used to educate "scientist-practitioners" who receive Ph.D. degrees. Psychologists with either Psy.D. or Ph.D. degrees are expected to be well-acquainted with the most relevant research in their field; the differentiating expectation is that “Ph.D. programs graduate producers of research and Psy.D. programs graduate consumers of research” (Norcross & Castle, 2002). One goal of both models is that familiarity with research should drive practice so that clinical decisions are shaped by scientific knowledge. The expectation that practitioners engage in clinical work armed with cutting-edge scientific facts may at times be difficult to fulfill for at least two reasons: What we know in the field of psychology is not always clear (Boisvert & Faust, 2003), and the information we assimilate is sometimes influenced by our allegiance to a particular theory or orientation toward practice (Luborsky et al, 1999). Additionally, the context in which we live shapes what we know. For example, the industrialization of the mental health field has helped to push the empirically supported treatments movement into the forefront of consciousness for many practitioners who must adapt to demands for increased structure and accountability posed by modern insurance and liability protocols (Barlow, 2000; Levant, 2004).

The search for factors that contribute to positive therapy outcomes has been one
of the most interesting and important areas of research in psychology for at least six decades. It is an area that has given rise to polarizing and fruitful academic debate when proponents of "technique" and proponents of "relationship" work to better define the interaction and contribution of these factors.

As modern outcome research has identified mediating and moderating relationships between the major factors, it has become clear that the factors that contribute to therapy outcome are deeply interrelated. Ogles, Anderson, and Lunnen (1999), noted that “the distinction between specific and common factors used to distinguish the crucial components of different therapies is a convenient yet artificial heuristic device” (p. 218). Given the difficulty involved in untangling all the interactions between specific and non-specific factors, and therapist and client personality factors, this is an important point. It is not always possible or even useful to separate sources of variance into discrete categories. In the case of psychotherapy outcome factors it is noteworthy that some findings have been successfully replicated to the extent that they are well-established. In the section below I will review research relevant to the major factors linked to therapy outcomes in order to support the idea that a familiarity with this research should form one core of knowledge that helps to shape any scientific professional’s approach to therapy.

Overview of Factors Contributing to Change in Therapy

As noted above, many years of psychotherapy outcome research has helped define four robust factors that contribute to therapy outcomes. These therapeutic factors, listed with their approximate contribution to therapy outcome in parentheses, are:

Extratherapeutic Change (40%), Common Factors (30%), Techniques (15%), and
Expectancy (15%) (Lambert & Barley, 2002). Together, these factors begin to answer the question, "What helps people with mental or behavioral health issues realize positive change?" Of these four factors, "Technique" and "Common Factors/Relationship Factors" have historically received most of the attention in psychology outcome factors debate and research, and with good reason. Currently, these are the factors most observable in the practice of psychotherapy—they most closely describe what therapists do with their patients.

Common Factors

The therapeutic relationship is one important facet included in the larger construct of therapeutic “common factors”—elements that are shared between therapy approaches regardless of theoretical orientation. A typical list of common factors includes dialogue, empathy, acceptance, warmth, a convincing rationale, encouragement of risk taking, client and therapist characteristics, confidentiality, and the therapeutic alliance (Luborsky, 1995). Rosenzweig (1936) hypothesized that because most psychotherapies share the main factors associated with curative effects, outcomes between different brands of therapy should be similar. In what has become an oft-quoted line in therapy outcome literature, he labeled his prediction “the Dodo bird verdict” after the bird in Alice in Wonderland who, after judging a footrace, proclaims: “Everybody has won and all must have prizes.”

The Dodo bird verdict is still relevant today. Psychotherapy in general has been repeatedly shown to “work” (Lambert & Bergin, 1994), and 80% of clients who receive therapy have better outcomes than those who go untreated (Lambert & Barley, 2001). Clients themselves have reported the general effectiveness of psychotherapy. In the
largest study of its kind to date, *Consumer Reports* magazine (CR, 1995) concluded from a non-controlled survey of four thousand readers that most were “highly satisfied with the [therapy] they received” and that “most had made strides toward resolving the problems that led to treatment” (CR, 1995, p. 734). In an outcome comparison of active treatments (Luborsky, et al., 2001) no significant differences between approaches were found. In a follow-up to their 2001 study, Luborsky et al. (2003) again found that outcomes among active therapy approaches tended to have non-significant differences. Luborsky et al. (1999) found that the small differences observed between therapy outcomes were largely due to researcher allegiance effects, with a Pearson correlation of .85 between researcher allegiance and differences in outcome.

Findings about the contributions of and relationships between major sources of outcome variance are always growing more complex (e.g., Joyce, Piper, & McCallum, 2003). Some specific techniques have been shown to work better for some problems, such as exposure treatments with specific phobias and response prevention for obsessive-compulsive disorders (Lambert, 1992). Technique and the therapeutic alliance have been shown to exert reciprocal influence on one another (e.g., Ackerman & Hilsenroth, 2003; Goldfried & Davila, 2006; Martin, Garske, & Davis, 2000). Multi-cultural approaches to outcome research have raised important questions about the utility of ethnic matching for the therapeutic dyad based on client level of acculturation (Sue, 2000). So, while modern studies still reaffirm the “profundity of the dodo bird” (Duncan, 2002, p. 32), the findings of recent therapy outcome research (e.g., Lambert, 2004) have added complexity to Saul Rosenzweig’s (1936) original hypothesis. Overall, there has been a trend of increasing support for the notion that the scientific application of specific common factors for
specific clients may lead to the best outcomes. In other words, “monolithic theories of change and one-size-fits-all therapy relationships are out; tailoring the therapy to the unique patient is in” (Norcross, 2002a, p.12).

Despite the number of variables involved and the complexity of knowledge necessary to tailor a therapy of good fit, the therapeutic alliance as rated by the client remains the factor most predictive of outcome within the therapy process (Stiles & Agnew-Davies, 1998). In 2002 the APA's Division 29 task force authored *Psychotherapy Relationships That Work*, edited by John Norcross. The purpose of the text was to "counterbalance extant efforts to promulgate treatment guidelines based solely upon lists of empirically supported treatments" (Norcross, 2002b, p. 1). Practically, the book explicates effective elements of the therapy relationship including the alliance, empathy, and goal consensus, and discusses a range of promising elements of the therapy relationship including positive regard, congruence, feedback, and self-disclosure. I will confine my discussion of common factors to a review of the research related to the therapeutic alliance and therapist empathy because together these components account for the majority of the variance due to common factors (Lambert & Barley, 2001).

*Therapy alliance*

Horvath and Bedi (2002) define the therapy alliance as the “quality and strength of the collaborative relationship”—a construct that includes the bonds and tasks of treatment and unites the therapist and client in the belief that they are working together toward a shared goal. Therapy alliance has been significantly correlated with outcome for therapies based on a diversity of theoretical principles including cognitive-behavior therapy (Raue & Goldfried, 1994), psychodynamic therapy (Eaton, Abeles, & Gutfreund,
gestalt therapy (Watson & Greenberg, 1994), and interpersonal therapy (Krupnick, et al., 1996). Additionally, the contribution of alliance to outcome across different therapy practices has been repeatedly found to be similar (Alexander & Luborsky, 1986; Martin, Garsky, & Davis, 2000).

Horvath and Bedi (2002) reported a mean effect size of .23 for the quality of the therapeutic alliance, based on their meta-analysis of 83 studies of the alliance and therapy outcome across a broad range of client problems and therapist theoretical orientations. This finding is similar to the .26 effect size reported by Horvath and Symonds in 1991 and to the effect size of .22 reported by Martin, Garske, and Davis in 2000 in earlier reviews of the same relationship. Importantly, there is a wide range of effect sizes among studies included in all three meta-analyses. In the 2002 meta-analysis these ranged from -.06 to .89. In light of this, the authors note that, while it is too early to draw firm conclusions, this varying range of effect may support the early hypothesis that different client problems interact differently with the therapeutic alliance.

New research continues to emerge that further supports the relationship between therapy alliance and outcome. Klein et al. (2003) reported that the alliance remained a significant predictor for outcome after controlling for prior patient improvement and prognostically relevant patient characteristics such as gender and level of social functioning. Loeb et al. (2005) found that early alliance predicted outcome in a course of manualized interpersonal and cognitive-behavioral therapy treatments of patients with bulimia nervosa, while treatment adherence did not. These results suggest, respectively, that the alliance continues to be a viable stand-alone construct for predicting outcome, and that it is an important component even in manualized treatments. Joyce, Piper, and
McCallum (2003) concluded that the mediation effect of the therapeutic alliance accounted for 33% of the direct effect of expectancy on outcome. Bond, Banon, and Grenier (1998) found that the use of transference interpretations as a specific technique could either hinder or foster the alliance depending on how strong the alliance was at the time of their use. These findings are noteworthy because they help to highlight the degree to which the therapy alliance impacts and is impacted by other factors associated with therapy outcome.

**Therapist empathy**

Carl Rogers (1980) defined empathy as

the therapist’s sensitive ability and willingness to understand the client’s thoughts, feelings and struggles from the client’s point of view…

It means entering the private perceptual world of the other [and] being sensitive, moment by moment, to the changing felt meanings which flow in this other person. (p. 142)

In practice, empathic therapists endeavor to understand their clients’ experiences and goals, not just the content of their speech. They help clients to symbolize their experiences in words and help them to deepen their experiences by attending to what is said and not said (Watson, 2002). Empathic therapists are able to understand clients’ feelings as a function of their lived history. These therapists have an awareness of their own feelings and use this awareness to generate appropriate, accurate, and warm responses (Fresbach, 1997).

Bohart, Elliot, Greenberg, and Watson (2002) emphasize that empathy is “best understood as a complex construct consisting of a variety of acts used in different ways by therapists of different orientations for different purposes” (p.90). Recent research (cf. Simpson, Ickes, & Orina, 2003; Vanaerschot, 2004) increasingly suggests that the
effectiveness of empathetic interventions is moderated by many client factors as well, including ego strength, and client perception of subjective closeness. Bohart, Elliot, Greenberg, and Watson (2002) reported four factors that potentially mediate between empathy and outcome. First, empathy is a relationship condition that is associated with higher rates of self-disclosure (Myers, 2000) and, in addition, can serve as a corrective emotional experience that helps improve client sense of self-worth (Bachelor, 1988). Furthermore, empathy assists with cognitive-affective processing and can help client think more productively about their situation (Sachse, 1990). Finally, empathy can promote client tendencies toward health by providing support and encouraging active client involvement in therapy (Orlinsky, Grawe, & Parks, 1994). Considered together these four factors help build an appropriately complex conceptual picture of empathy as an interactive construct that fosters relationships and social learning, helps deepen clients’ internal sense of experience and meaning, and actuates important client capacities toward self-healing.

Empathy has been highly correlated with other relationship helping skills such as positive regard and genuineness (Salvio, Beutler, Wood, & Engle, 1992). This adds complexity to the task of measuring empathy as a unique construct. Support for a causal link between empathy and therapy outcome is supported along several lines: The central work of client-focused therapists is empathetic reflection (Brodley & Brody, 1990) and this therapy has been found to be effective (Elliot, 2002). Miller, Taylor, and West (1980) reported that ratings of therapist empathy by supervisors were strongly correlated with future outcomes (r = .82). Finally, structural equations have shown a causal relationship between empathy and outcome (Burns & Hoekema, 1992).
In their 2002 review of the literature Bohart, Elliot, Greenberg, and Watson reported that empathy accounted for 4-10% of the outcome variance across 190 studies. Effect sizes for empathy ran between .22 and .32 across the same studies. These results are significant, especially when compared to the contributions of technique for outcome. Wampold (2001) estimated that technique accounts for 1-8% of the outcome variance, while Lambert and Barley (2001) found that it accounts for as much as 15%.

**Extratherapeutic Factors**

Extratherapeutic factors for therapy are the variables of a client’s personal attributes and environment outside the therapy room. These include such elements as severity of disturbance, motivation, capacity to relate, ego strength, ability to identify a focal problem, fortuitous or stressful life events, social support, intimate relationships, community resources, socio-economic status, physical health, general social and political conditions, education, employment status, and housing status (Lambert & Ogles, 2004; Orlinsky, Ronnestad, & Willutzki, 2004; Roehrle & Strouse, 2008). Extratherapeutic factors have a major impact on therapy outcome and many people experience “spontaneous remission” of their symptoms without formal treatment. The median rate for extratherapeutic improvement is 43%, with a range of 18-67% (Bergin & Lambert, 1978; Lambert & Bergin, 1994).

People experiencing mental health issues tend to seek help in a variety of forms. As noted by Lambert and Barley (2002), people in emotional distress often engage with self-help groups, self-help books, friends, family, and clergy. The presence of a positive intimate relationship in the client’s life has been found to be an especially important health-promoting factor for those experiencing emotional conditions (Asay & Lambert,
interventions in their day-to-day lives. The popularity of social-networking sites, supportive forums, and self-help websites on the internet suggests that many people get some support from an online community as well.

It has not been easy for researchers to identify specific extratherapeutic factors that are highly predictive of therapy outcome as stand-alone variables. In their 2008 review of the 27 articles available at the time, Roehrle and Strouse found only a small correlation ($r = .13$) between social support and outcome. They noted that social support may interact synergistically with other factors through pathways that have not yet been identified, which may help to explain this small correlation. Client stage-of-change has been identified as a good predictor of dropout, and a promising predictor for outcome (DiClemente & Prochaska, 1982; McConnaughy, Prochaska, & Velicer, 1983; Prochaska, DiClemente, & Norcross, 1992; Prochaska & Norcross, 2002). Research on stage-of-change theory increasingly suggests that pairing interventions appropriate to clients’ understanding of their problems and readiness to change is important. However, these findings are largely based on research of smoking-cessation and other behavioral-health programs—more work needs to be done with the stage-of-change concept within the therapy setting. In their 2002 review of the extant literature, Sue and Lam reported no evidence of a direct relationship between low socioeconomic status (SES) and therapy outcome. However, both low SES and low education levels have been identified as significant predictors for premature dropout (Reis & Brown, 1999).

The difficulty with specifying how extratherapeutic variables interact with therapy outcome highlights several realities about extratherapeutic factors: There are
numerous sources of extratherapeutic variance, these factors vary widely from client to client, and these factors interact with each other through currently unexplored pathways.

Duncan and Miller (2006) noted,

“In the absence of compelling evidence for any of the specific client variables to predict outcome or account for the unexplained variance, this most potent source of variance remains largely uncharted. This suggests that the largest source of variance cannot be generalized because these factors differ with each client. These unpredictable differences can only emerge one client at a time, one alliance at a time, one therapist at a time, and one treatment at a time” (p. 217).

The implications for clinical practice are that therapists should have knowledge of the major sources of extratherapeutic variance, that they work to understand clients’ problems within the context of clients’ lives, and that they endeavor to help clients potentiate their own unique set of extratherapeutic resources (Prochaska & Norcross, 2002; Duncan & Miller, 2006).

**Client Expectancies**

Client attitudes about, expectations of, and initial responses to psychotherapy have been consistently associated with therapy outcomes. These phenomena are commonly grouped together and labeled as expectation factors. Expectation factors for therapy outcome include client hope, or the belief that therapy will lead to symptom relief or positive change of some kind; so-called placebo effects, for example, the client’s tendency to experience measurable relief simply by making the decision to seek therapy; and client role expectations, in other words, his or her expectations about what therapy will consist of and how the therapist and client will interact (Arnkoff, Glass, & Shapiro, 2002). Quantitative analysis of expectations as a source of variance in therapy outcome dates back to the 1960s (cf., Frank, 1968; Goldstein, 1962) and at least one study that
identified client expectations as related to outcome, by Rosenthal & Frank, was published in 1956.

Client expectations occur regardless of the type of therapy being used, which has led some researchers (Weinberger and Eig, 1999) to note that they are “the ignored common factor” (p. 357) for therapy outcome. Lambert and Barley (2001) identified expectation factors in a class of their own as the third most influential source of variance for therapy outcome, accounting for about 15% of the observed difference. Arnkoff, Glass, and Shapiro, in their 2002 review of 24 studies noted mixed findings in the relationship between client expectations and therapy outcome, dependent on how outcome was measured in these studies. They reported consistent support for the relationship between client expectations and therapy outcome when outcome was measured by independent clinician rating, by therapeutic alliance as rated by the client, or by composite measures of outcome. They found only mixed support for the relationship between expectancy and outcome when clients measured their own outcome with self-report. The relationship between client expectations and outcome and was not significant when outcome was measured by therapist report.

Recent research has sought to explicate the relationship between expectancies and other sources of variance for therapy outcome in order to clarify the pathways through which expectancies exert their effects. Joyce, Piper, and McCallum (2003) stated: “It can be regarded as established fact that expectancies influence therapy outcome. How this occurs has not yet been empirically specified” (p.672). In that study, researchers found that the alliance between client and therapist mediated the relationship between client expectations of improvement and therapy outcome, accounting for one third of
expectancies’ direct impact on outcome. They reported that clients with positive expectations of therapy rated the therapeutic alliance higher than those with low expectations and may therefore be more willing to participate in the work of therapy. Similarly, Meyer, et al. (2002) found that clients with positive expectations for therapy “engage more constructively in session which helps bring about symptom reduction” (p. 1051).

Earlier research (Tollinton, 1973) found that other variables, such as personality factors, also impact the relationship between client expectations and outcome. In that study, expectations were less predictive of outcome when clients scored high on measures of neuroticism. Additionally, Lightsey reported in a 1997 study that measures of client self-efficacy showed a positive correlation with expectancies. Studies like these help to illustrate the complex interrelationships between outcome factors—expectations are impacted by a client’s current experience of therapy, by the therapeutic alliance, by experiences in the near past such as other therapy episodes, and by historical experiences accumulated over a lifetime that contribute to personality.

The client’s belief that therapy will be helpful appears to be an important factor in the development of a strong working alliance (Hartley, 1985; Stiles et al., 1986). Bandura (1997) noted that a previous positive experience with therapy may also contribute to a client’s motivation to collaborate with his or her new therapist. However, many clients enter therapy with unrealistic expectations about the process and outcome (Tinsley, Bowman, & Barich, 1993). Fortunately, as noted by Joyce, Piper, and McCallum (2003), “A critical aspect of expectancies is their potential for modification” (p.678). In order to fully utilize the contributions of expectancies on outcome, it seems fundamental that
therapists should be familiar with effective modification strategies and techniques.

Research in this area is sparse.

In their review of the expectancy outcome literature available at the time, Arnkoff, Glass, and Shapiro (2002) concluded that there was insufficient information in the extant literature to yield empirically supported clinical techniques to maximize client expectancies. They noted that the research supports the notion that raising a client’s expectations of therapy benefit early in the therapy process is probably a good idea. Others (Meyer et al., 2002) have noted that clients who are initially doubtful about therapy may benefit from “more persuasion” (p.1055) by the therapist—in the form of a convincing rationale and an encouraging outlook about the possibility of positive change. In addition, these authors note that therapists may benefit by paying increased attention to clients with whom they have trouble establishing an initial alliance, as this may be an indicator that the client’s role expectations are different from the therapist’s. In this case, additional education and discussion may help therapist and client to align their expectations, thereby increasing the likelihood of establishing a solid working alliance.

Specific Techniques

Studies on technique published in peer-reviewed psychology journals number in the thousands. The history of researchers' interest in cataloging specific efficacious techniques began in the 1970s (Bergin, 1997) and is still strong today (Norcross, 2002). In 1995 the APA’s Division 12 Task Force on Promotion and Dissemination of Psychological Procedures published its findings—a list of empirically supported interventions for psychological issues. That article and the updates that accompanied it (Chambless et al., 1996; Chambless et al., 1998) helped to catalogue the knowledge of
empirically supported treatment techniques that existed at the time. The 1998 publication of Nathan and Gorman's influential and controversial text, *A Guide to Treatments that Work* helped to further galvanize the empirically validated therapies (EVT) movement and contributed to the body of scientific knowledge with a thorough review of the empirically-based studies of therapy technique.

What is an empirically validated therapy? From Chambless et al. (1996), and Chambless and Hollon (1998), EVTs are treatments that have been validated by at least two independent experiments with good between-group design utilizing randomized control and demonstrating an effect greater than psychological or pill placebo. Alternatively, an EVT may be established by more than 8 single case design experiments with good design and may be alternatively validated by comparison to already established treatments in experiments with adequate statistical power. Studies for EVTs must use a treatment manual or similar guide that clearly explains the techniques being studied, they must treat a population with specified problems with reliable inclusion criteria, and they must use reliable and valid outcome assessments and appropriate data analysis. Well-known EVTs include interpersonal therapy for depression (Elkin et al., 1989) and exposure or desensitization treatment for a number of anxiety and stress-related issues (Feske & Chambless, 1995; Kazdin & Wilcoxon, 1976; Mattick & Peters, 1988). Since the mid-1990s, many researchers, including those at the forefront of the EVT movement, have suggested that the term EVT be replaced with a more accurate term. Today, the term “empirically supported therapy” (EST) is in common use.

Some researchers have challenged the utility of EST experimental design and have begun working to identify general principles of change and to clarify the
relationship between specific techniques and other sources of outcome variance. Levant (2004), Norcross (2002), Weston and Morrison (2001), and others have noted that the findings of EST studies may not generalize to therapy in a natural setting because EST experimental design does not approximate real life conditions. These studies generally assume that

long-term problems can yield to brief therapy; that patients have only one definable symptom which they can accurately report at the onset of therapy; that the elements of efficacious therapy are dissociable from one another; and that a written systematic procedural manual can permit minimally trained individuals to deliver psychotherapy effectively (Yalom, 2002, p. 223).

In their meta-analysis of empirically supported treatments for depression, panic, and generalized anxiety disorder, Weston and Morrison (2001) reported that these treatments result in less impressive outcomes for these diagnoses than had been previously reported, due in major part to researcher treatment-allegiance effects. As reported by Luborsky et al. (1999), when different treatments are compared for efficacy, differences between them are highly correlated with researcher allegiance in the expected direction. When a correction is applied, observed differences are often reduced to non-significance. In their 2004 review of the empirical status of ESTs, Westen, Novotny, and Thompson-Brenner concluded that randomized controlled trial methodology is not supported for use with all disorders and treatments and they recommended that researchers “shift from validating treatment packages to testing intervention strategies and theories of change that clinicians can integrate into empirically informed therapies” (p. 631).

Research related to the integrative psychotherapy concept of stages of change (DiClemente & Prochaska, 1982; McConnaughy, Prochaska, & Velicer, 1983; Prochaska,
DiClemente, & Norcross, 1992) indicates that EST studies that do not account for client attrition rates may be seriously flawed. This is because the stage of change clients are in when they enter treatment has been found to be a predictor of outcome (Levant, 2004). Clients in the pre-contemplative and contemplative stages of change are unlikely to respond well to specific, action-based treatments because they have not yet reached an understanding of their problem (Prochaska & Norcross, 2003). Consequently, they are more likely to drop out prematurely and are sometimes not included in the research analysis.

Ablon and Marci (2004) noted that studies of psychotherapy process have shown that treatments may promote change in different ways than their proponents and underlying theories claim. They argued that the assumed mechanisms of action for most EST studies is narrow and may miss important information about what is actually facilitating client change. For example, Castonguay et al. (1996) in a study of cognitive therapy for depression, found that the well-accepted technique of linking a client’s thoughts with their feelings was negatively related to outcome when the therapeutic alliance was strained. Ablon and Jones (1998) found that in closely-monitored cognitive behavioral treatment the presence of minimal interpersonal process or psychodynamic elements were both predictive of positive outcome. Studies like these highlight the difficulty of defining the therapy process and of making its elements discreet.

A recent trend in one faction of the outcome research community has been the increasing call for a shift away from the identification of specific EST packages and toward the identification of empirically supported change processes. Many researchers (e.g., Garfield, 1998; Goldfried & Wolfe, 1998; Howard, Moras, Brill, Martinovich, &
Lutz, 1996; Norcross, 2002; Westen, Novotny, and Thompson-Brenner, 2004) have advocated for increased attention to the change processes that underlie effective intervention. As noted by Ablon and Marci (2004), once change processes are identified in a naturalistic therapy setting, efficacy studies could follow to empirically validate these processes. They asserted that this research approach encourages a shift away from the validation of specific brand name treatments and toward an integration of empirically validated change processes usable by practitioners from all therapy orientations.

Core Knowledge for Psy.D. Students

It is a clear expectation of the Vail model for graduate education in clinical psychology that Psy.D. students be familiar with the basic research findings in their field (Norcross, 2002). The findings noted below form a conceptual foundation from which Psy.D. students might consider psychotherapy outcome findings, as these findings continue to emerge. First, over sixty years of outcome research has shown that psychotherapy works (Lambert & Bergin, 1994). Second, our understanding of the factors that contribute to therapy outcomes is incomplete (Lambert, 2004). Third, recent studies have given us a basic understanding of the relative contribution of the chief sources of variance for outcome (Lambert & Barley, 2002). Last, newer literature continues to explicate the relationships between sources of variance, and will continue to modify our understanding of how therapy works (e.g., Ackerman & Hilsenroth, 2003; Goldfried & Davila, 2006).

More specifically, Psy.D. students near graduation should have an understanding of the relative contribution of the major sources for outcome variance, as outlined by Lambert and Barley (2002). Norcross (2002) has suggested that particular attention be
paid to the contribution of the therapeutic relationship, as this factor comprises the largest source of variance over which therapists exercise control. Students should know that therapist empathy has a major impact on therapy outcome (Bohart, Elliot, Greenberg, & Watson, 2002). In addition, they should have an awareness of the importance of the therapeutic alliance (Horvath & Bedi, 2002) and be able to provide a working definition of the term.

Students should recognize that extratherapeutic variables have the largest impact on therapy outcome. They should be familiar with the major sources of extratherapeutic variance and endeavor to understand the extratherapeutic variables most salient to their individual clients, as suggested by Duncan and Miller (2006). Students should also know that many people get better without therapy, and that approaches other than therapy are effective for some problems (Lambert & Bergin, 1994).

Students should be aware of client expectancies, and of their potential for modification. They should be familiar with the importance of presenting a convincing rationale (Meyer et al., 2002), and of raising a client’s expectation of benefit early in the therapy process (Arnkoff, Glass, & Shapiro, 2002). Additionally, students should know that clients’ positive expectations for therapy appear to be an important factor in the development of a strong working alliance (Hartley, 1985).

Students should know the relative impact of specific techniques on outcome and have a working understanding of techniques that are consistently supported for use with specific problems such as exposure or desensitization treatment for anxiety and stress-related issues (Feske & Chambless, 1995). In addition, students should be aware that the EST movement is a work in progress and that it has been subject to a number of
substantive suggestions for improvement (e.g., Luborsky et al., 1999; Weston and Morrison, 2001).

Finally, students should cultivate an open attitude toward new research findings. Familiarity with concepts such as efficacy, effectiveness, and researcher alliance are valuable tools for the interpretation of new research. Students should maintain an awareness that the factors associated with therapeutic change influence each other (e.g., Joyce, Piper, & McCallum), and that the research in this area is growing increasingly complex.

The Psy.D. Program

There is surprisingly little research published in peer-reviewed journals that examine the curricula or any other aspect of Psy.D. programs. No study to date has examined Psy.D. students’ knowledge of general psychotherapy outcome research findings. Peterson (2003) pointed out that Psy.D. graduates score slightly less well on the Examination for Professional Practice in Psychology (EPPP) than their peers graduating with Ph.D.s. Additionally, graduates with Ph.D.s fill significantly more positions as tenured faculty in academic settings than those with Psy.D. degrees. Norcross, Castle, Mayne, and Sayette (2004) noted that although there are several common myths about professional psychology programs including, “Almost anyone can be admitted” and “Psychodynamic and humanistic faculty dominate those programs,” these conjectures are simply untrue. From their 2004 survey of 46 APA-accredited clinical Psy.D. programs these researchers concluded that Psy.D. programs admit, on average, 41% of their applicants and that the modal theoretical orientation endorsed by faculty in Psy.D. programs is cognitive-behavioral.
The paucity of research on Psy.D. programs determines that there is little if any
evidence to directly support the hypothesis that a demand for training relevant to practice
within managed care could be supplanting curricula related to outcome factors research in
Psy.D. programs. This line of thought is speculative but is supported along several lines:
First, the demand for training that prepares graduates for work within managed health
care is real and tends to result in curricula that aim to arm students with specific
techniques and knowledge (e.g., ethics related to managed care, instruction in marketing
and finance, understanding a utilization review, empirically validated brief therapies) that
will be useful to them in that arena (Daniels, Alva, & Olivares, 2002). Second, an
influential literature base (cf., Chambless et al., 1996; Chambless et al., 1998; Nathan &
Gorman, 1998) exists that advocates the importance of disseminating ESTs in clinical
practice and graduate education. Third, cognitive-behavioral faculty outnumber faculty
endorsing other theoretical orientations in Psy.D. programs (Norcross, Castle, Mayne, &
Sayette, 2004). This is relevant because the cognitive-behavioral tradition tends to highly
value specific therapy techniques, empirically supported treatments, and manualized
treatment. Last, Psy.D. programs are, on average, one year shorter than Ph.D. programs
(Norcross, Castle, Mayne, & Sayette, 2004). In programs geared toward clinical practice
rather than the generation of research, time is at a premium for the soon-to-be practitioner
to learn skills they will need in order to work upon graduation. As discussed above, the
field of psychology is in the midst of a shift toward industrialization (Prochaska &
Norcross, 2003). In this context it is plausible that priorities for academic training might
shift toward addressing immediate concerns about the emerging realities of managed
care. If this is true, it is possible that some other element of training is being de-emphasized because of the priority shift.

Review of Three Studies that Inspired the Current Research

Before discussing the specific construction and methodology used in the current study, it will be practical to reference three specific studies that helped to inspire and shape the current research. The first of these is Lambert and Barley’s 2002 “Research Summary on the Therapeutic Relationship and Psychotherapy Outcome.” An online search reveals that this important article has already been cited hundreds of times in many scholarly articles in peer-reviewed psychology journals, books, and textbooks. Lambert and Barley reviewed more than 100 studies and reviews to report the estimated contribution of factors related to patient psychotherapy outcomes, reported earlier in this paper. They further concluded that psychotherapy outcome research “has not supported the notion that specific therapy techniques are a major contributor to client progress when compared with the contributions attributable to the therapeutic relationship” (p.17). Additionally, they assert that “the advocacy of specific forms of treatment for specific disorders can to lead to an overemphasis on the least curative aspects of the therapeutic endeavor” (p.17). These conclusions helped me to articulate the problem identified in this paper and inspired some of the questions used in the survey for this project.

Boisvert and Faust (2003) published a study entitled “Leading Researcher’s Consensus of Psychotherapy Research Findings: Implications for the Teaching and Conduct of Psychotherapy”. Participants were oft-cited, highly published psychology researchers who were asked to rate the degree to which 20 statements regarding therapy outcomes were supported in the literature. Boisvert and Faust reported that these
researchers showed strong trends of agreement in their support of seven statements. Four of these seven statements directly relate to outcome research, including, “People change more due to ‘common factors’ than to ‘specific factors’ associated with therapies”, “The relationship between the client and the therapist is the best predictor of outcome”, and “In general, therapies achieve similar outcome.” They concluded that these results provide a means to measure practitioners’ current understanding of the outcome literature in this area by comparing individuals’ ratings scores with composite scores from the experts. Their findings provide a useful tool for measuring practitioners’ knowledge of the outcome literature.

In a follow-up study, Boisvert and Faust (2006) surveyed 181 practicing licensed psychologists about their knowledge of general psychotherapy research findings. They used high-consensus statements identified in their 2003 study of experts as a foundation for their survey. They found that practicing psychologists had only a modest familiarity with general therapy research findings, and that they tended to underestimate the benefits of therapy. Interestingly, they found that familiarity with research could not be predicted by years since graduation, percentage of time spent conducting therapy, theoretical orientation, or perceived familiarity with the research.

The study reported in this paper used several high-consensus statements about outcome factors research taken directly from the Boisvert and Faust studies, it co-opted their general methodology, and it employed their main suggestion for further research—that mean scores of experts’ ratings of outcome factors research could be compared to the ratings of other groups in order to assess whether these groups are familiar with research in that area.
Statement of the Problem

As identified in the background research, the contribution of the four major psychotherapy outcome factors has been well-established by thousands of experiments and many years of study. However, there is no research that has assessed the knowledge possessed by current Psy.D. students regarding these findings. The central argument for graduate-level education for therapists hinges on the idea that this training will improve therapy outcomes (Stein & Lambert, 1995). Presumably, what therapists know influences the quality of their work. The Vail and Boulder training models for psychologists both require practitioners to be familiar with current research—the assumption is that this familiarity will benefit practice. As noted above, what we know in the field of psychology is not always clear. However, the conclusions reached in the outcome factors literature represent an area of rare clarity in the field of psychology. Thus, the question arises: What do psychologists-in-training know about this important research?

In the current study, I surveyed Psy.D. students in APA-approved programs with a clinical emphasis about their knowledge of “discreet” categories of variance for therapy outcome, and in so doing made use of a “convenient yet artificial heuristic device” (p.218) suggested by Ogles, Anderson, and Lunnen in their 1999 study. To wit, it is currently impossible to practically and discreetly separate sources of variance for therapy outcome, and a growing body of literature by prominent researchers, noted above, increasingly suggests that attempts to do so may no longer be useful or efficient. However, general conclusions of outcome factors research provide a useful orientation for effective therapy. Outcome research suggests a fairly consistent hierarchy in the contribution of different sources of outcome variance. Therapists unaware of the relative
contribution of these different outcome factors may not work to prioritize the most curative aspects of therapy. For example, the extant research suggests that therapists who do not endeavor to understand the context of the client’s life, support the activation of extratherapeutic resources for the client, and work hard to build and repair the therapeutic alliance are behind the times.

It may be the case that conclusions furnished by the very latest research on therapy outcome are a step ahead of the “average” Psy.D. curriculum taught in the classroom. With this in mind, I surveyed Psy.D. students in APA-approved programs with a clinical emphasis about the relative importance of outcome factors as presented in Lambert and Barley’s well-known 2002 research summary on outcome factors and the therapeutic relationship. In addition, participants were surveyed about the content of their classroom training with regard to outcome factors research and about their perceived familiarity with that research.

Contribution of the Study

In this study I examined the relationship between ratings scores for statements related to general psychotherapy outcome factors research generated by different groups of Psy.D. students and those generated by experts in Boisvert’s and Faust’s 2003 study. In addition, the scores generated by student participants who endorsed different orientations to therapy were compared. Similarly, the scores generated by students with different levels of academic training (as defined by their academic year in their Psy.D. program) were compared. Finally, participants were asked to rate some statements about outcome factors not given in the Boisvert and Faust study and to rate statements related
to their perceived level of competence and training, in order to provide a broad picture of Psy.D. students’ level of knowledge about the major factors that affect therapy outcomes.

This study contributes to the knowledge base regarding Psy.D. students’ familiarity with important outcome factors research. Evidence provided by this study may have implications for Psy.D. training programs in general and might serve as a yardstick for individual students to gauge their current understanding of the psychotherapy outcome factors literature. In addition, results of this study may encourage therapy practitioners to identify gaps in their knowledge base and act accordingly to increase their understanding. The study was designed to test the following hypotheses.

Hypotheses

Hypothesis 1

Mean scores generated by experts in Boisvert and Faust’s (2003) study and those generated by student groups will be significantly different.

Hypothesis 2

Psy.D. students who had completed more years in graduate school will generate mean ratings scores that more closely match those of the experts than their peers with less academic experience.

Hypothesis 3

Psy.D. students will overestimate the importance of specific factors (techniques) in therapy outcomes, while underestimating the contribution of the other major factors.

Hypothesis 4

Psy.D. students will identify that their academic coursework emphasizes specific factors over the other major factors that affect therapy outcomes.
Hypothesis 5

Psy.D. students will identify that they have more research knowledge about specific techniques than they do for the other major factors that affect therapy outcomes.
METHOD

Participants

Recruitment

Participants were recruited by email posted to the NCSPP faculty listserv. Included in this recruitment email was a letter for prospective student participants that was forwarded by faculty at some schools to that Psy.D. program’s student body. Copies of both recruitment letters are included in Appendix A.

Exclusionary Criteria

Age. Participants 18 and older were invited to participate. All currently enrolled Psy.D. students, in programs with a clinical emphasis, 18 or over, at APA-accredited schools that use the NCSPP listserv were allowed to participate in the study.

Materials and Measures

Survey Construction

The survey was designed for this study and had not been published before. Data for this survey were collected using an online survey published at surveymonkey.com. The survey was administered in three sections. The first section collected basic information such as age, year in school, and orientation to therapy. In the second section, participants rated thirteen statements about factors that contribute to therapy outcomes, with regard to whether they felt these statements were supported in the related research. Six of these thirteen survey questions were taken directly from Boisevert and Faust (2003), who polled experts in the field of psychology. The rationale for the seven remaining questions in this section, generated specifically for this survey and not published in the Boisvert and Faust studies, is supported in the literature review section
of this study. In the third section, participants rated 13 statements about the focus and
category of their coursework, their training, and their perceptions of their own familiarity
with therapy outcome research.

Rating Scales

After providing basic demographic data in the first section, subjects were asked
to rate statements about factors that affect psychotherapy outcomes on a 1-7 Likert scale.
As in the Boisvert and Faust (2003, 2006) studies described above, subjects were
instructed that a rating of 1 reflected that they thought the statement was not supported in
the outcome literature. A rating of 7 reflected that they thought the statement was well
supported in the outcome literature. Participants were instructed that a rating of 4
reflected that they were familiar with the research but felt it was inconclusive or
equivocal with regard to the given statement. The rating scale for this section included a
“Don’t Know” response category, that participants were instructed to endorse if they
were not familiar with the research to which a particular statement referred. In the final
survey section, participants were asked to rate statements about their academic training
and about their perceived familiarity with general psychotherapy outcome research. A 1-7
Likert scale was used, with 1 meaning that participants disagreed strongly with the
statement, 4 meaning that they felt neutral with regard to the statement, and 7 meaning
that they agreed strongly with the statement.

A complete copy of the survey is included in Appendix B.

Procedure

The solicitation email noted above contained a link to the survey. The email made
clear that this survey was independent research, was fully voluntary, and was not
associated with their learning institution. The nature and purpose of the study was stated at the outset—this study was fully transparent and no manipulation of participants occurred. The link took participants to an informed consent gateway that included the following information about the nature of the study: Participants did not receive feedback about their answers; no score or grade was given. This was an anonymous study. Participants were not asked to specify which learning institution they attended, and the online data collection service did not track this information. Data was analyzed and published in aggregate form only. Results were grouped into categories based on participant therapy orientation and year in school.

Data collection for this survey took place online at surveymonkey.com. All data was transferred in encrypted format. Data was briefly stored in an encrypted database at surveymonkey.com. Analysis and containment took place in Portland, OR, using a home computer. Data collection took place from 7/1/08-10/1/08.

Analysis of Data

For each survey statement mean, mode, and standard deviation were calculated for the entire response set. The number and percentage of respondents who chose “Don’t Know” as a response was noted for each statement. Respondents who chose “Don’t Know” were grouped separately and these responses were not scored or included in the calculation of other statistics. Mean scores and standard deviations for respondent groups labeled Integrative, Cognitive Behavioral, and Other therapy orientations were calculated for each statement. The Integrative group was made up of respondents who chose “Integrative” as the best descriptor for their orientation to practice and by those who listed specific integrative modalities such as “cognitive/behavioral/psychodynamic.” The
Cognitive Behavioral group was made up only of students who selected cognitive behavioral as their orientation of choice. To ensure adequate group size (Keppel, 1991) an “Other” group was made up of respondents who endorsed specific orientations to therapy other than cognitive behavioral or integrative.

Mean group scores and standard deviations for respondents in years 1-4 of their Psy.D. program were calculated for each statement, and the results of one-way analysis of variance (ANOVA) that examined differential responses by year is provided. Respondents in the “Forth Year” group included all respondents in the forth year of their Psy.D. program and beyond. Independent groups two-tailed T-Tests (alpha=.05) were run that compared all groups to each other. Dependent groups two-tailed T-tests (alpha=.05) were run when appropriate, for example, when responses of forth-year participants to different items were compared. Significant results are reported.

When available, the mean scores and standard deviations for experts and practitioners polled in the Boisevert and Faust (2003, 2006) studies for the same statement are provided. All reference to “psychology practitioners” and “experts” in the discussion below refer to the practitioner and expert groups surveyed in those studies.
RESULTS

Participants completed 156 valid surveys. Basic demographic information about participant gender, orientation to therapy, and year in school is provided below. Please refer to Tables 1 and 2 for a summary of results. For a detailed item analysis of all survey items, please refer to Appendixes C and D. In general, survey results did not support, or only partially supported my hypotheses. Findings related to individual hypotheses are provided below.

Male respondents: 28
Female respondents: 128

Theoretical Orientation to Therapy:

Integrative: 57
Cognitive/Behavioral: 40
Psychodynamic: 22
Eclectic: 11
Humanistic/Existential: 8
Gestalt: 7
Behavioral: 3
Cognitive: 2
Feminist: 2
Psychoanalytic: 2
Other: 3

Integrative Group: 57
Cognitive Behavioral Group: 40
Other Group: 59

First Year Respondents: 29
Second Year Respondents: 35
Third Year Respondents: 39
Forth Year Respondents: 53
Table 1

<table>
<thead>
<tr>
<th>Item</th>
<th>Students’ mean</th>
<th>DK %</th>
<th>Experts’ mean</th>
<th>Practitioners’ mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Most of the therapy outcome variance can be accounted for by differences in specific therapeutic techniques.</td>
<td>2.32 (1.23)</td>
<td>5.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Specific techniques contribute more to therapy outcomes than extratherapeutic factors.</td>
<td>2.90 (1.35)</td>
<td>20.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*The client’s level of adherence to treatment is the best predictor of therapy outcomes.</td>
<td>4.14 (1.60)</td>
<td>4.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Many problems respond better to specific therapy techniques compared to nonspecific techniques.</td>
<td>4.44 (1.62)</td>
<td>10.4%</td>
<td>3.17 (1.27)</td>
<td>5.23 (1.16)</td>
</tr>
<tr>
<td>*Of the factors that account for therapeutic outcome variance extratherapeutic factors contribute most.</td>
<td>4.68 (1.55)</td>
<td>16.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*The expectation effect contributes to therapy outcomes as much or more than specific techniques.</td>
<td>4.94 (1.11)</td>
<td>11%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Therapy is helpful to the majority of clients.</td>
<td>5.09 (1.15)</td>
<td>3.2%</td>
<td>6.33 (.49)</td>
<td>5.44 (1.59)</td>
</tr>
<tr>
<td>*The client’s social support system is a strong predictor of a client’s ability to benefit from therapy.</td>
<td>5.15 (1.33)</td>
<td>3.2%</td>
<td>4.90 (.99)</td>
<td>5.64 (.89)</td>
</tr>
<tr>
<td>*Most therapists learn more about effective therapy techniques from their experience than from the research.</td>
<td>5.21 (1.51)</td>
<td>13%</td>
<td>5.50 (1.57)</td>
<td>5.05 (1.34)</td>
</tr>
<tr>
<td>*People change more because of common elements rather than specific elements associated with therapies.</td>
<td>5.26 (1.44)</td>
<td>11.7%</td>
<td>5.73 (.91)</td>
<td>5.04 (1.35)</td>
</tr>
<tr>
<td>Common factors contribute to therapy outcomes more than specific techniques.</td>
<td>5.33 (1.29)</td>
<td>10.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In general, different therapy orientations achieve similar outcomes.</td>
<td>5.48 (1.67)</td>
<td>1.3%</td>
<td>6.0 (1.04)</td>
<td>4.46 (1.64)</td>
</tr>
<tr>
<td>*The rating of the therapeutic alliance by the client is the best predictor of therapy outcomes.</td>
<td>5.77 (1.14)</td>
<td>3.2%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. DK% is the percentage of student respondents who marked “Don’t Know” for the item.
Scale items: 1 = statement is not supported in the research, 4 = research is equivocal with regard to the statement, 7 = statement is strongly supported in the research.
* Statements marked with an asterisk were not rated significantly differently by any respondent groups.
Table 2
Students’ Perceived Knowledge of Outcome Factors and Perceptions of Coursework, By Year (Standard Deviations in parentheses.)

<table>
<thead>
<tr>
<th>Item</th>
<th>Year 1 mean</th>
<th>Year 2 mean</th>
<th>Year 3 mean</th>
<th>Year 4 mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have taken one or more classes that emphasized the expectation effect and its contribution to therapy outcome.</td>
<td>3.83 (2.05)</td>
<td>4.06 (2.22)</td>
<td>4.13 (2.12)</td>
<td>4.07 (1.73)</td>
</tr>
<tr>
<td>I have taken one or more classes that emphasized extratherapeutic factors and their contribution to therapy outcome.</td>
<td>4.24 (2.01)</td>
<td>4.57 (1.87)</td>
<td>4.79 (2.07)</td>
<td>4.90 (1.56)</td>
</tr>
<tr>
<td>I have taken one or more classes that emphasized specific elements of therapies and their contribution to therapy outcome.</td>
<td>4.48 (2.10)</td>
<td>5.54 (1.93)</td>
<td>5.82 (1.65)</td>
<td>5.79 (1.43)</td>
</tr>
<tr>
<td>I have taken one or more classes that emphasized common elements between therapies and their contribution to therapy outcome.</td>
<td>5.34 (1.93)</td>
<td>5.51 (2.09)</td>
<td>5.61 (1.89)</td>
<td>5.70 (1.35)</td>
</tr>
<tr>
<td>I am familiar with research of the expectation effect and its contribution to therapy outcome.</td>
<td>4.03 (1.70)</td>
<td>3.88 (1.78)</td>
<td>3.82 (1.64)</td>
<td>4.24 (1.49)</td>
</tr>
<tr>
<td>I am familiar with research of extratherapeutic factors and their contribution to therapy outcome.</td>
<td>3.90 (2.08)</td>
<td>3.86 (1.73)</td>
<td>4.54 (1.41)</td>
<td>4.66 (1.47)</td>
</tr>
<tr>
<td>I am familiar with research of specific therapy elements and their contribution to therapy outcome.</td>
<td>4.38 (1.68)</td>
<td>4.20 (1.71)</td>
<td>4.87 (1.43)</td>
<td>4.87 (1.36)</td>
</tr>
<tr>
<td>I am familiar with research of common elements between therapies and their contribution to therapy outcome.</td>
<td>4.41 (1.80)</td>
<td>4.60 (1.54)</td>
<td>4.79 (1.49)</td>
<td>5.19 (1.13)</td>
</tr>
<tr>
<td>As a practitioner/scholar of psychology I believe that effective practice is strengthened by a working knowledge of practice-based research findings.</td>
<td>5.72 (1.13)</td>
<td>5.94 (1.00)</td>
<td>5.82 (1.29)</td>
<td>5.85 (.99)</td>
</tr>
<tr>
<td>I have received accurate and balanced training in my Psy.D. Program about the different factors that make therapy “work”.</td>
<td>5.17 (1.65)</td>
<td>4.97 (1.65)</td>
<td>5.13 (1.57)</td>
<td>4.94 (1.32)</td>
</tr>
</tbody>
</table>

Note. Scale items: 1 = strongly disagree with statement, 4 = neutral about the statement, 7 = strongly agree with statement.
Findings Related to Individual Hypotheses

**Hypothesis 1**

Mean scores generated by experts in Boisvert and Faust’s (2003) study and those generated by student groups will be significantly different.

Support for Hypothesis 1 was low. Students and experts generated significantly different ratings for only two of the six statements rated by both groups. Students rated the statement, *Therapy is helpful to the majority of clients*, significantly lower than experts, $T(166) = 3.70, p = .0003$. For the statement, *Many problems respond better to specific therapy techniques compared to nonspecific techniques*, the student rating was significantly higher than the expert rating, $T(166) = 2.65, p = .0088$.

**Hypothesis 2**

Psy.D. students who had completed more years in graduate school will generate mean ratings scores that more closely match those of the experts than their peers with less academic experience.

Hypothesis 2 was not supported. The results of a one-way analysis of variance (ANOVA) indicated that student ratings of statements about general therapy outcome research did not vary meaningfully as a function of their year in school.

**Hypothesis 3**

Psy.D. students will overestimate the research support for the importance of specific factors (techniques) for therapy outcomes, while underestimating the contribution of the other major factors.

Hypothesis 3 was largely unsupported. Students correctly rated two statements that overemphasized the importance of specific techniques for therapy outcome as having
low support in the research. In contrast, students correctly rated the statement, People change more because of common elements rather than specific elements associated with therapies, as having moderate to high support in the research. The student rating for this statement was not significantly different from the expert rating. Similarly, students correctly rated the statement, Common factors contribute to therapy outcomes more than specific techniques, as having moderate to high support in the research.

As reported above, students as a whole significantly overestimated the degree to which clients’ problems respond to specific techniques over nonspecific techniques, when compared to the experts. This finding provides some support for Hypothesis 3. However, as noted in the Discussion section of this study, the pattern of student responses may indicate that students were simply confused about the meaning of the phrase ‘nonspecific techniques.’

Hypothesis 4

Psy.D. students will identify that specific factors are emphasized in their academic coursework over the other major factors that contribute to therapy outcomes.

Hypothesis 4 was partially supported. Students as a whole endorsed moderate to strong classroom exposure to common factors and specific techniques, with no significant difference between these two sources of variance. They endorsed moderate exposure to extratherapeutic factors and moderate to low exposure to expectation factors, with the difference between these groups T(155) = 2.94, p = .0038. Common factors were perceived as more emphasized than extratherapeutic factors, T(155) = 4.34, p < .0001, and expectation factors, T(155) = 7.17, p < .0001. Specific techniques were perceived as
more emphasized than extratherapeutic factors, \( T(155) = 3.97, p < .0001 \), and expectation factors, \( T(155) = 6.81, p < .0001 \).

The results of a one-way analysis of variance (ANOVA) indicated that, in general, student perceptions about their exposure to various elements of academic coursework did not vary meaningfully as a function of their year in school. Only one significant difference between students in different years was found. First year students agreed less strongly than their more advanced peers that they had taken classes emphasizing specific therapy techniques, \( T(80) = 3.35, p = .0012 \).

For Hypothesis 4, responses of students with four or more years in their Psy.D. program were further analyzed to capture the perceptions of students near the end of their academic experience. Forth-year students’ responses indicated that expectation factors were perceived as less emphasized in their academic coursework than common factors, \( T(52) = 7.04, p < .0001 \); specific techniques, \( T(52) = 6.21, p < .0001 \); and extratherapeutic factors, \( T(52) = 3.82, p = .0004 \). Extratherapeutic factors were perceived as less emphasized in coursework than common factors, \( T(52) = 4.78, p < .0001 \), and specific techniques, \( T(52) = 4.47, p < .0001 \). No significant differences in perceptions of specific factors and common factors were observed for forth-year students.

**Hypothesis 5**

Psy.D. students will identify that they have more research knowledge about specific techniques than they do for the other major factors that affect therapy outcomes.

Hypothesis 5 was partially supported. Students as a whole reported moderate familiarity with all major factors that contribute to therapy outcome variance. Students’ responses indicated that they had more perceived familiarity for common factors than for
extratherapeutic factors, $T(155) = 2.81, p = .0056$, or expectation factors $T(155) = 4.50, p < .0001$. Their responses indicated more perceived knowledge of specific techniques than expectation factors $T(155) = 3.40, p = .0009$. There were no significant differences in students’ perceptions of their knowledge of common factors and specific techniques in the classroom.

The results of a one-way analysis of variance (ANOVA) indicated that students’ perceptions of their general outcome research knowledge did not vary meaningfully as a function of their year in school.

For Hypothesis 5, responses of students with four or more years of in their Psy.D. program were further analyzed to capture the perceptions of students near the end of their academic experience. Forth-year students indicated moderate to low perceived familiarity with outcome research related to expectation factors, moderate familiarity with extratherapeutic factors, and moderate to high familiarity with specific techniques and common factors. Forth-year students’ responses indicated that their perceived knowledge for common factors was significantly higher than for the other major factors, even when compared to their perceived familiarity with specific techniques, $T(52) = 2.30, p = .0254$. Forth-year students reported less familiarity with the expectation factors than with research related to either specific techniques, $T(52) = 2.98, p = .0044$, or common factors, $T(52) = 4.62, p < .0001$. They reported less familiarity with research related to extratherapeutic factors than with research related to common factors, $T(52) = 2.58, p = .0126$. 
DISCUSSION

In general, students surveyed in this study showed more familiarity with general psychotherapy outcome findings than I hypothesized they would. In the sections below I will discuss findings related to my major hypotheses, review strengths and weaknesses in Psy.D. students’ understanding of the major factors that affect therapy outcomes, and discuss other findings identified by this study. Additionally, I will discuss implications for Psy.D. curricula, limitations of the current study, and directions for further research.

Findings Related to Major Hypotheses

Hypothesis 1

For four of six statements rated by both students and experts, no significant differences between groups was observed. This finding provides little support for the hypothesis that students’ ratings would differ significantly from those of the experts. In the section below, similarities and differences between student and expert ratings of statements about psychotherapy outcome findings are discussed.

For the statement, Therapy is helpful to the majority of clients, all student groups significantly underestimated its level of support in the research when compared with the experts, with the average difference $T(166) = 3.70$, $p = .0003$. Interestingly, as students progressed in school their ratings showed a trend toward less confidence that this statement was supported in the research. Forth-year students rated this statement significantly lower than their first-year peers, $T(80) = 3.05$, $p = .0031$. Similarly, Boisvert and Faust (2006), found that therapy practitioners tended to underestimate research support for positive therapy outcome findings, when compared to the experts.
An awareness by clinical psychology practitioners of the historical strain between research and practice may contribute to this misconception about the helpfulness of therapy, as portrayed by the research. In other words, practitioners may have had positive personal clinical experiences with therapy outcome, but still expect the research to show only modest benefits due to “ideological differences between practitioners and researchers” (Boisvert & Faust, 2006, p.713). In their 1995 review of the literature Beutler, et al. (1995) found that a conflict in viewpoints about the value of clinical practice as a method for generating new efficacious techniques leads to a complex and often hostile relationship between scientists and practitioners. A growing awareness of this ideological gap between practice and research could help to explain why forth-year Psy.D. students significantly underestimated the research support for therapy benefits when compared not only to the experts, but also to their less-experienced 1st year colleagues.

For the statement, *In general, different therapy orientations achieve similar outcomes*, student and expert ratings did not significantly differ. However, psychology practitioners in Boisvert and Faust (2006) significantly underestimated the level of support for this statement when compared both to experts, $T(191) = 3.20$, $p < .0001$, and to student groups in the current study, $T(335) = 5.65$, $p = .0016$.

In Boisvert and Faust (2006), the average amount of time practitioner respondents had practiced therapy since graduation was 20 years, with a mode of 12 years. Systematic biases may be operating for these experienced clinicians, who have had significant time to develop patterns of favored treatments in their practice of therapy. The repeated use of certain successful approaches may contribute to both availability and confirmatory bias
(Arkes, 1981; Tversky & Kahneman, 1973). In this pattern, clinicians may associate positive outcomes with a narrow range of treatment, disregard other efficacious treatments, and seek support for their favored approach in the literature while disregarding disconfirmatory evidence for that approach. Students have not had as much time as seasoned practitioners of psychology to develop biases through practice.

In addition, as noted by Prochaska and Norcross (2002), the integrative orientation to psychotherapy has gained steadily in popularity over the last 15 years, and is expected to continue to grow. For this study, students who endorsed the integrative orientation to therapy made up 43% of the sample. Proponents of the cognitive behavioral approach comprised the next largest group; 26% of the sample. Integrative approaches to practice emphasize the use of general principles of change and treatments that work, regardless of their theoretical origins. Psy.D. students today may be exposed to more information regarding general therapy change processes and equivocacy between therapies, than current practitioners were 20 years ago. These circumstances may help to explain why students’ ratings of this statement differed significantly from the practitioner rating, but not the expert rating.

**Hypothesis 2**

The results of a one-way analysis of variance (ANOVA) indicated that year in school was not a meaningful predictor of student ratings of statements about general therapy outcome research findings. Rather, a consensus was observed among students groups for most statements. These findings run counter to the hypothesis that ratings of more advanced students would more closely match expert ratings than those of their less experienced peers.
Boisvert and Faust (2006) found that years since graduation and years in clinical practice were not meaningful predictors of practicing psychologists’ knowledge of general psychotherapy research outcome findings. They discussed the acquisition of research knowledge as a judgment task and argued that differing opinions about what the researchers have concluded are likely, because of individuals’ differential exposure to research and because there are not clear guides available to help consumers of research with its interpretation. This may help to partially explain why ratings of students in different academic years did not follow an observable pattern. It may be the case the students disagreed about the findings they had been exposed to, or felt unsure about how to evaluate research findings. It may also be the case that different students had different values about the importance of research knowledge, for example, a first year student who highly valued research may have provided more accurate ratings than a forth-year student who did not. More research is needed to substantiate these hypotheses.

Hypothesis 3

One major hypothesis of this study was that students would overestimate the research support for the importance of technique for therapy outcome. There are many social, economic, and academic conditions that may contribute to this occurrence, as discussed earlier in this study. However, this hypothesis was only partially supported. Two statements in the survey, *Most of the therapy outcome variance can be accounted for by differences in specific therapeutic techniques*, and, *Specific techniques contribute more to therapy outcomes than extratherapeutic factors*, purposefully overstated the importance of specific techniques for therapy outcome. Students as a whole accurately rated these statements has having low support in the research, and their
ratings for these statements were the lowest given by student respondents in this study. This finding runs counter to the hypothesis that students would overemphasize the support in the research for technique as source of outcome variance, when compared to other sources.

For the statement, *People change more because of common elements rather than specific elements associated with therapies,* there appeared to be consensus among students, experts, and practicing psychologists for moderate support in the research. As a whole, students correctly rated the statement, *Common factors contribute to therapy outcomes more than specific techniques,* as having moderate to high support in the research. Students in the Cognitive Behavioral group underestimated the research support for this statement when compared to the Integrative group, $T(95) = 2.01, p = .0473,$ and when compared to the Other orientations group, $T(97) = 3.16, p = .0021.$ The historical emphasis on the importance of specific factors for therapy outcome in the cognitive behavioral tradition may help to account for this observed difference between respondents with different orientations to therapy. However, the responses of Psy.D. students as a whole indicates a general understanding of the relative importance of techniques as a source of variance for therapy outcome, when compared to relationship/common factors and extratherapeutic factors.

When the contribution of specific technique to therapy outcome was compared to the contribution of “nonspecific techniques,” a phrase used in the Boisvert and Faust (2006) survey, student ratings were less accurate. For the statement, *Many problems respond better to specific therapy techniques compared to nonspecific techniques,* all student groups except the Integrative group significantly overestimated the degree to
which this statement is supported in the research. When compared to the experts, the
difference score for the Cognitive Behavioral group was $T(50) = 3.64, p = .0006$, and for
the Other orientations group it was $T(69) = 2.54, p = .0133$.

The integrative approach to therapy emphasizes the importance of common
factors for therapy outcome, the general equivocacy between therapy approaches for
outcome, the utility of general mechanisms of change in therapy, and treatment planning
that involves a review of the relevant literature, regardless of its theoretical origin
(Prochaska & Norcross, 2002). Students who self-identify as integrative in orientation
may have more exposure to these concepts than do their peers in the Cognitive
Behavioral or Other orientations groups. This may help to explain why students in the
Integrative group did not underestimate the research support for this statement as did
their peers in the Cognitive Behavioral and Other groups.

It is also possible that some students were confused about the meaning of the
phrase “nonspecific techniques”. In the literature, the phrases “common factors” or
“relationship factors” are more commonly used to reference outcome variance that occurs
equally between all therapy brands. As noted above, students responded very differently
to a number of statements about common/relationship factors that employed different
phrasing.

When compared to the experts, therapy practitioners in Boisvert and Faust (2006)
overestimated the research support for this statement to an even greater degree than
students in the current study did $T(191) = 5.92, p < .0001$. Therapy practitioners also
significantly overestimated the research support for this statement when compared to all
student groups, with the average difference, $T(335) = 5.19, p < .0001$. For experienced
therapy practitioners, issues of availability and confirmatory bias, as discussed above, may help to explain the observed difference between practitioners and both expert and student groups.

With a few notable exceptions, discussed above, there was a general consensus observed between respondent groups in their ratings of statements about psychotherapy outcome research findings. The construction of the survey itself may have contributed to this outcome. The six statements borrowed from the Boisvert and Faust (2003) study were all high-consensus statements, ranked similarly by experts. In addition, students were offered a ‘Don’t Know’ (DK) option for all statements in this section. All student data included in analyses was from students who chose to give an actual rating. This may further explain the observed consensus, as information from students who did not know how to rate a statement was not reflected in a low score. It may also be the case that the relative importance of major factors that contribute to therapy outcomes is becoming common knowledge for students of psychology. This would help to explain the consensus observed between students in different academic years with regard to statements related to outcome research. More research is needed to validate this hypothesis.

Hypothesis 4

The responses of Psy.D. students as a whole indicated that they perceived common factors and specific techniques as more emphasized in their classroom training than extratherapeutic factors or expectation factors. In general, this perception did not vary with year in school. However, forth-year students rated the statement, “I have taken one or more classes that emphasized specific elements of therapies and their contribution
to therapy outcome” significantly higher than their first-year colleagues, T(80) = 3.35, p = .0012. Significant differences between advanced and beginning students were not observed for similar statements about common factors, extratherapeutic factors, or expectation factors. It was expected that as Psy.D. students progressed in school they would endorse having taken more classes related to all the major factors that contribute to therapy outcome. Why did Psy.D. students respond in this way only in the case of specific techniques?

It is possible that students had a general awareness that psychotherapy outcome factors were emphasized in their classroom training, but that this awareness was not refined enough to differentiate which classes emphasized which elements, except in the case of specific techniques. If this is the case, more specificity may be required in the classroom to help students identify when other major sources of variance for therapy outcome are being emphasized. In other words, it is possible that all the major factors for therapy outcome are being presented in the classroom in an accurate and balanced way, but that better labeling is needed to help students identify which factors they are learning about, especially in the case of expectation and extratherapeutic factors.

As identified in the literature review section of this study, there are many reasons why specific techniques may actually be more emphasized in the classroom than the other major outcome factors. The finding that students perceived that they had taken more classes that emphasized specific techniques as they advanced in school, but showed no difference in their perception of the number of courses they had taken that emphasized other outcome factors may provide some evidence for the notion that specific techniques are either better labeled in the classroom, or overrepresented in the curriculum, or both.
More research is required to help explain students’ perceptions of the content of their coursework with regard to the major factors that affect therapy outcomes.

**Hypothesis 5**

In general, students in all academic years endorsed moderate perceived familiarity with outcome research findings. Year in school was not found to be a predictor of students’ perceptions of their familiarity with research related to sources of therapy outcome variance. It was expected that more advanced students would endorse more perceived familiarity with outcome research than their less-experienced peers, however, of the four statements in this section, only one ran in the expected direction. Forth-year respondents endorsed more perceived familiarity with research related to common factors than did their first-year colleagues, \( T(80) = 2.78, p = .0068 \). In addition, forth-year students’ responses indicated that they perceived they were most familiar with general outcome research related to common factors, even when compared to their perceived familiarity with specific techniques, \( T(52) = 2.30, p = .0254 \). This is an interesting finding especially because forth-year students endorsed more classroom emphasis on specific techniques than their first year colleagues, as discussed earlier. So, whereas no difference was observed in the perception of first-year students with regard to their knowledge of the major outcome factors, by the time they neared graduation, students endorsed the most familiarity with common factors.

There are a number of possible explanations for these findings. More research is necessary to determine if, for example, primacy or recency effects influenced Psy.D. students’ perceptions of their outcome factors knowledge. Additionally, education related to the factors that contribute to therapy outcomes is likely occurring outside the
classroom, during clinical practicum and fieldwork placements. Students moderately to strongly agreed with the statement, *Most therapists learn more about effective therapy techniques from their experience than from the research.* This provides some evidence that Psy.D. students perceive that their learning extends beyond the classroom.

Boisvert and Faust (2006) found that years since graduation and years in clinical practice did not predict actual research knowledge among practicing clinical psychologists. They did not report specific findings related to perceived knowledge for these variables, but did find that practitioners’ perceptions of their familiarity with general outcome research findings were not predictive of their actual knowledge.

This study was not constructed to examine the relationship between students’ perceived knowledge and their actual knowledge. Moreover, this study identified very few differences in students’ actual knowledge or perceptions of their knowledge, as a function of their year in school. More research is needed to establish whether, for example, first-year Psy.D. students overestimate their familiarity with research findings when compared to their forth-year peers.

**Other Findings**

In general, students agreed moderately to strongly that they had received balanced training in their Psy.D. program about the factors that make therapy work. Similarly, Psy.D. students moderately to strongly agreed with the statement, *As a practitioner-scholar of psychology I believe that effective practice is strengthened by a working knowledge of practice-based research findings.* This statement was included in the survey, in part, as an anchor statement with which most student respondents, all of whom were currently pursuing an advanced degree in psychology, were expected to agree. This
statement garnered the highest mean rating given by student groups for this study (5.84). It is interesting to note that many students only moderately agreed with this statement, given that it is a guiding principle of the Vail model used to educate Psy.D. students.

Neither of these statements were endorsed differently by student respondents as a function of their year in school. This may be because both statements were rated comparatively high by all groups, leaving little room for variance due, for example, to increased buy-in as students progressed in their program. Students in the Cognitive Behavioral group agreed more strongly than their peers in the Other group, T(97) = 2.26, p = .0261, that they had received balanced and accurate training in their Psy.D. program. If specific techniques are more emphasized in the classroom than other outcome factors, this may help to explain this finding, given the strong value placed on technique in the cognitive behavioral tradition. More research is necessary, however, to substantiate this hypothesis, and explain the observed difference in perception between members of different theoretical orientations to therapy.

For the statement, *Most therapists learn more about effective therapy techniques from their experience than from the research*, there appeared to be general consensus between students, practitioners, and experts, of moderate support in the research. Given that all the data analyzed in this study was generated by respondents who had a doctorate in psychology or who were pursuing one, this is an interesting finding. The link between effective practice and research knowledge is a fundamental assumption of the Boulder and Vail training models, and of graduate education in general. Establishing a clear link between positive therapy outcomes and graduate education has not been straightforward (Luborsky, et al., 2002; Stein & Lambert, 1995), and more research is necessary to
establish the relationship between therapy outcome and knowledge of outcome research findings (Boisvert & Faust, 2006).

Students who endorsed a Cognitive Behavioral orientation rated this statement as having less support in the research than their peers in the Other orientations group, $T(97) = 3.97, p = .0001$. The emphasis on the importance of research in the cognitive behavioral tradition may help to explain this observed difference. In addition, many of the orientations to therapy captured in the Other group (Psychodynamic, Gestalt, Humanistic/Existential, Feminist) place a high value on experiential learning and practice (Prochaska & Norcross, 2002), which may further account for this difference.

A statement about equivocacy between therapy brands with regard to outcome was accurately rated by students as having moderate to strong support in the research. No significant differences between student groups were observed for this statement. This may suggest that students with different orientations to therapy and in different years in school keep an open mind about therapy approaches other than their own, or are at least aware that the literature supports this apolitical stance.

Students accurately rated a statement about the therapeutic alliance as the best predictor of outcome has having moderate to strong support in the research. They accurately rated a competing statement, *The client’s level of adherence to treatment is the best predictor of therapy outcome*, as having significantly less support in the research, with the difference between the statements, $T(155) = 10.36, p < .0001$. This suggests that Psy.D. students are aware of the importance of the therapeutic alliance for therapy outcome, even when compared to the importance of client adherence to treatment.
Don’t Know Responses

For 7 of 13 statements about general psychotherapy outcome research, more than 10% of student respondents indicated that they did not know whether the statement was supported or not supported in research (See Table 1). Interestingly, these “Don’t Know” responses were spread relatively evenly by academic year, and were not overrepresented in the less experienced groups as might have been expected (See Appendix D for details).

Two statements regarding extratherapeutic factors were particularly challenging for students. For the statement, Of the factors that account for therapeutic outcome variance, extratherapeutic factors contribute most, 16.9% chose Don’t Know (DK). For the statement, Specific techniques contribute more to therapy outcomes more than extratherapeutic factors, 20.1% chose DK. However, when asked about a specific extratherapeutic factor, social support, student respondents answered very differently. For the statement, The client’s social support system is a strong predictor of the client’s ability to benefit from therapy, only 3.2% chose DK. For this statement, students showed consensus with both practitioners and experts, and rated it as having moderate to strong support in the literature. This response pattern may indicate that some students were simply confused about the meaning of the phrase ‘extratherapeutic factors’. As reported above, the responses of forth-year Psy.D. students indicated that extratherapeutic factors were perceived as less emphasized in their coursework than specific or common factors. Forth-year students additionally reported that they had less knowledge of the research on extratherapeutic factors than they did for common or specific factors. This may help to explain the high number of DK responses to items related to extratherapeutic factors.
Students’ Familiarity with General Outcome Research Findings

In general, Psy.D. students showed more familiarity with outcome research findings than I hypothesized in this study. For four of six statements rated by experts, students’ ratings did not differ significantly from the expert group. For the seven statements without expert ratings, students generally responded in the direction of the statement’s actual support in the research. For example, they rated statements about the importance of common factors for therapy outcome as having strong research support. Accurately rating statements about extratherapeutic factors proved challenging for students in all years, as evidenced by a high number of DK responses for these items.

Year in school was not found to be predictive of student ratings, and students with more academic experience did not generate ratings more similar to those of the experts than their first-year peers, as was hypothesized. In addition, students did not appear to significantly overestimate the importance of specific technique for therapy outcome as was hypothesized. Student ratings of statements regarding relationship/common factors seemed to indicate an understanding of the importance of these factors for therapy outcome, even when compared to the importance of technique. In addition, students in general exhibited an understanding that the research supports equivocacy between therapy brands for therapy outcome. Students who endorsed a cognitive behavioral orientation underestimated the research support for the contribution of common factors as a source of outcome variance when compared to specific factors, and these students overestimated support for the notion that problems respond better to specific techniques than to common factors, when compared to the experts. Perhaps the most surprising finding was that Psy.D. students in all groups significantly underestimated the degree to
which the literature supports psychotherapy as an effective intervention overall.

Interestingly, as students progressed in school, this inaccurate perception increased.

**Implications for Psy.D. Curricula**

For many statements about general psychotherapy outcome research findings, more than 10% of the student participants endorsed that they did not know whether the statement was supported in the literature. This finding would be easier to understand if these DK responses were overrepresented in the less-experienced years, but they were not. Both Psy.D. and Ph.D. students are expected to have a working knowledge of the important research in their field by the time they graduate (Norcross, 2002). In this study only Psy.D. programs with a clinical emphasis were surveyed. Presumably, familiarity with general psychotherapy outcome findings for students in these programs is an important part of their graduate study. Although more studies are needed to establish a link between outcome research knowledge and therapy outcome, therapists unfamiliar with this research are precluded from its use (Boisvert & Faust, 2006).

Forth-year students reported that the major sources of variance for therapy outcome were given significantly different emphases in their academic coursework. Forth-year students perceived the most emphasis on common factors and specific techniques in the classroom. They perceived extratherapeutic factors as less emphasized and expectation factors as being least emphasized in the classroom. This perceived ordering, if accurate, makes intuitive sense in light of several research findings explored above. Although extratherapeutic factors are the largest source of outcome variance for therapy outcome (Lambert & Barley, 2002), these factors vary widely from patient to patient and the relationship of specific extratherapeutic variables to therapy outcome has
been difficult to define (Duncan & Miller, 2006). These realities may limit the feasibility of teaching students scientifically supported methods for maximizing extratherapeutic factors.

Until such methods are available, it is important that students know about the relative influence of extratherapeutic factors on therapy outcome, and that they take a case-by-case approach to exploring the extratherapeutic variables most salient for the patient in front of them (Duncan & Miller, 2006). Similarly, although expectation factors influence therapy outcome as much or more than specific techniques (Lambert & Barley, 2001), scientific methods for maximizing their use in therapy have not yet emerged (Arnkoff, Glass, & Shapiro, 2002). What seems important at this time is that students appreciate the relative contribution of the expectation effect, and that they are familiar with the basic suggestions of the research in this area, for example, that therapists provide encouragement early in therapy, educate clients about the therapy process, present a convincing rationale, and address differences in expectations as they arise (Meyer et al, 2002).

The factors for therapy outcome perceived as most emphasized in coursework by forth-year students, common factors and specific techniques, are those that have been historically most represented in the research. It is interesting that forth-year students perceived these factors as equally emphasized in their coursework, given that the relative contribution of common/relationship factors is clearly greater, according to the research. More studies are needed to establish whether specific techniques for therapy outcome are overrepresented in Psy.D. curricula. As noted above, the predominance of cognitive behavioral faculty in Psy.D. programs (Norcross, 2002), and the current emphasis on
technique in practice due to a number of socio/cultural/political/economic factors (Jorgensen, 2004) lends some early support to this hypothesis.

Finally, it seems important that Psy.D. students know that the research supports the notion of therapy as a helpful endeavor for clients. Effectiveness studies, like the famous 1995 Consumer Reports study, and many hundreds of efficacy studies (e.g., Chambless, et al., 1998) have shown that therapy has positive benefits for clients. Psy.D. programs would do well for themselves and their students to ensure that graduates enter the workforce with the knowledge that clinical psychology is well-supported in the literature as a helpful practice.

Limitations of the Study and Directions for Future Research

This study is limited in a number of ways. Participants were self-selected and sampling bias may limit the generalizability of results for this study. Researcher allegiance effects (e.g., Jacobsen, 2006; Luborsky, 1998) may also temper findings of this study, especially those for which differences between participants of different theoretical orientations to practice were observed. The chief investigator for this research subscribes to the integrative approach to practice and many statements rated by participants related directly to issues of importance for that orientation.

A causal connection between research knowledge and therapy outcome has not been firmly established—several studies have failed to confirm that graduate study in psychology improves therapy outcomes (Berman & Norton, 1984; Christensen & Jacobson, 1994) and others have reported only small improvements for graduate-trained practitioners (Faust & Zlotnick, 1995; Stein & Lambert, 1995). The lack of firm connection between graduate academic training and therapy outcomes undermines the
common assumption that more knowledge leads to better therapy. Interestingly, this finding (or lack thereof) further supports a common factors or Dodo bird argument for equanimity among therapies, but does nothing to support an underlying assumption of this study that accurate knowledge of outcome factors research may be important for therapy outcomes. It seems probable that some practitioners are particularly good at forming relationships and projecting empathy, variables that correlate strongly with therapy outcome (Norcross, 2002), but have little or no knowledge of the outcome factors literature. As neophyte therapists at the beginning of their careers, Psy.D. students would seem particularly likely to fall into this group. A central question raised by this study is whether psychotherapy practitioners with strong outcome research knowledge achieve better outcomes than their less-informed colleagues. More research is needed to answer that question.

In this study, student participants were asked whether statements about outcome factors and therapy outcome were supported or not supported in the research. They were not surveyed for their opinions or beliefs about the relative contribution of sources of variance for therapy outcome or about whether therapy works. Awareness of the ideological gap between research and practice may color perceptions of what the research has found (Beutler et al., 1995; Goldfried & Wolfe, 1996). Practitioners in Boisvert and Faust’s 2006 study and students in this study both significantly underestimated research support for positive therapy outcomes in general. It would be helpful to know whether these beliefs about the research carry over into personal beliefs, or if students and practitioners maintain positive opinions about the benefits of therapy, but expect the research to show less support for the effectiveness of their craft.
REFERENCES


APPENDIX A—Online Survey

1. Informed Consent

PACIFIC UNIVERSITY
INFORMED CONSENT TO ACT AS A RESEARCH PARTICIPANT

Are PsyD Students Familiar with the Major Factors that Contribute to Psychotherapy Outcomes?

Investigators' Contact Information

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1. Introduction and Background Information
You are invited to participate in a research study of PsyD students. You were invited to participate because you are currently enrolled in an APA-accredited PsyD program. Please read this form carefully and ask any questions you may have before agreeing to be in this study.

This study is being conducted by Alec Wilson, M.S. The purpose of this study is to determine whether PsyD students are familiar with the major factors that contribute to psychotherapy outcomes. Results of the study could be used in the future to help refine academic curricula in PsyD programs.

2. Study Location and Dates
The study is expected to begin by July 1, 2008, and to be completed by September 15, 2008. This study will be performed through an online survey at surveymonkey.com. The principle investigator and faculty advisors for this study are based in Portland, OR at Pacific University’s School of Professional Psychology.

3. Procedures
If you agree to be in this study, we will ask you to fill out an online survey that gathers basic, non-identifying demographic information, and information related to your clinical training and classroom experience. We will ask you to answer several questions about factors that affect therapy outcomes, based on your knowledge of the extant research. All information will be transmitted in encrypted form, and results will be analyzed in aggregate form. No identifying information about participants will be collected or released.

4. Participants and Exclusion
Only participants who meet the following conditions will be included in the study: Persons 18 years old or older who are currently enrolled in APA-accredited PsyD programs. Participants who do not meet the above criteria will be excluded from the study.

5. Risks and Benefits
Participants in this study will remain anonymous. Because of the nature of the Internet, anonymity cannot be guaranteed completely. However, because no identifying information is being gathered, and information is being transmitted in encrypted format, the risk of a breach of anonymity is minimal.

There are no direct benefits to participating in this study. General, future benefits might include more refined curricula in PsyD programs.

6. Alternatives Advantageous to Participants
Not Applicable

7. Participant Payment
You will not receive payment or compensation for your participation.

8. Promise of Privacy
The records of this study will be kept private. This study is anonymous. Data will be kept in a password-protected computer database. If the results of this study are to be presented or published, it will not be possible to identify you as an individual.
9. Voluntary Nature of the Study
Your decision whether or not to participate will not affect your current or future relations with Pacific University. If you decide to participate, you are free to withdraw at any time without prejudice or negative consequences.

10. Compensation and Medical Care
Not Applicable
2. Informed Consent

Contacts and Questions
The researcher will be happy to answer any questions you may have at any time during the course of the study. The researcher can be reached at (503) 757-6259. If you are not satisfied with the answers you receive, please call Pacific University's Institutional Review Board, at (503) 352 – 2112 to discuss your questions or concerns further. All concerns and questions will be kept in confidence.

You may print out the information above as proof of your participation in this research.

* By clicking the "I Agree" button below you are giving your consent to participate in the research project.

- [ ] I agree.
- [ ] I disagree.
3. Instructions for General Information Section

You will be presented with several questions that ask for general information about you and your PsyD program. (Reminder: Participants in this study will remain anonymous and no identifying information will be solicited. Giving general identifying information such as age and sex is optional.)
4. General Information

* Are you currently enrolled in an APA-approved PsyD program? (This includes the internship year.)
  - Yes
  - No

* How is your yearly graduate schedule structured with respect to academic terms?
  - Quarters (4 terms per school year)
  - Trimesters (3 terms per school year)
  - Semesters (2 terms per school year)
  - Other (please specify)

* How many academic terms have you completed in your PsyD program? (For example, if you are currently in the first term of your third year in a program that runs on the semester system, you have completed 4 terms.)

* Did you complete a Master's Degree in a related field before entering your PsyD program? (If yes, please note which degree you received in the Degree Title box.)
  - Yes
  - No
  - Degree Title
5. General Information

* If any, about how many face-to-face clinically supervised hours have you had with clients within the context of your program? (This would typically include any face-to-face clinical hours you have had in any practicum, clinical fieldwork, or internship placements.)

* If any, about how many face-to-face clinically supervised hours have you had with clients outside the context of your program? (For example, while working as a Masters-level therapist.)

* As a therapist, what is your primary orientation to therapy?

- [ ] Gestalt
- [ ] Psychoanalytic
- [ ] Cognitive/Behavioral
- [ ] Psychodynamic
- [ ] Integrative
- [ ] Humanistic/Existential
- [ ] Feminist
- [ ] Eclectic
- [ ] Cognitive
- [ ] Behavioral

Other (please specify)
6. General Information

How old are you?

What is your gender?

Does your PsyD program require you to complete a Master's Thesis?
- [ ] Yes
- [ ] No

If a Master's Thesis is required, have you completed it?
- [ ] Yes
- [ ] No
- [ ] n/a

Does your PsyD program require you to complete a Doctoral Dissertation or other final scholarly project?
- [ ] Yes
- [ ] No

If a Doctoral Dissertation or another scholarly project is required, have you completed it?
- [ ] Yes
- [ ] No
- [ ] n/a
7. Instructions for Rating Scale Section

Next, you will be asked to rate several statements about factors that contribute to or relate to therapy outcomes. Please rate each statement on a 1-7 scale, based on WHETHER THAT STATEMENT IS SUPPORTED IN THE OUTCOME RESEARCH. A rating of 1 indicates you feel strongly that it is not supported. A rating of 7 indicates you feel strongly that the statement is supported by the research. A rating of 4 indicates that you are familiar with research in this area, but feel it is equivocal with regard to the statement. A "Don't Know" response indicates that you are not familiar with the research related to the statement.
8. Rate each statement according to its level of support in therapy outcome re...

* The client’s level of adherence to treatment is the best predictor of therapy outcomes.

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9. The client’s social support system is a strong predictor of a client’s ability to benefit from therapy.

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10. *In general, different therapy orientations achieve similar outcomes.*

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11. People change more because of common elements rather than specific elements associated with therapies.

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12.

* Most of the therapy outcome variance can be accounted for by differences in specific therapeutic techniques.

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13.

* The rating of the therapeutic alliance by the client is the best predictor of therapy outcomes.

1  2  3  4  5  6  7  Don't Know

Not Supported-Equivocal-
Strongly Supported
14.

* Therapy is helpful to the majority of clients.

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83
**15.**

*Many problems respond better to specific therapy techniques compared to nonspecific techniques.*

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Not Supported—Equivocal—Strongly Supported
**16.**

*Of the factors that account for therapeutic outcome variance, extratherapeutic factors contribute most.*

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17.

* The expectation effect contributes to therapy outcomes as much or more than specific techniques.

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Specific techniques contribute more to therapy outcomes than extratherapeutic factors.

Not supported—Equivalen
Strongly Supported
19. 

* Most therapists learn more about effective therapy techniques from their experience than from the research.

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20. *Common factors contribute to therapy outcomes more than specific techniques.*

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89
21. Instructions for Personal Statement Rating Section

Next, you will be asked to rate several personal statements. Please rate each based on how true they are for you. A rating of 1 indicates that you disagree strongly with the statement. A rating of 7 indicates that you agree strongly with the statement. A rating of 4 means you feel neutral; you neither disagree nor agree.
22. Personal Statement Rating

* I have taken one or more classes that emphasized specific elements of therapies and their contribution to therapy outcome. (Specific elements include techniques, manualized treatments and protocols, etc.)

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* I have taken one or more classes that emphasized common elements between therapies and their contribution to therapy outcome. (Common elements include alliance building, dialogue, empathy, etc.)

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* I have taken one or more classes that emphasized the expectation effect and its contribution to therapy outcome. (The expectation effect relates to the client’s belief that therapy will be helpful to him or her.)

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* I have taken one or more classes that emphasized extratherapeutic factors and their contribution to therapy outcome. (Extratherapeutic factors include client stage-of-change, social supports, etc.)

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### 23. Personal Statement Rating

**I am familiar with research of specific therapy elements and their contribution to therapy outcome.**

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**I am familiar with research of common elements between therapies and their contribution to therapy outcome.**

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**I am familiar with research of the expectation effect and its contribution to therapy outcome.**

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**I am familiar with research of extratherapeutic factors and their contribution to therapy outcome.**

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**As a practitioner/scholar of psychology I believe that effective practice is strengthened by a working knowledge of practice-related research findings.**

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**I have received accurate and balanced training in my PsyD program about the different factors that make therapy "work."**

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24. You Have Completed the Survey

Thank you for completing this survey! Results will be analyzed and reported in aggregate form. If you would like more information about this study, please contact Alec Wilson, M.S. by email: wils0278@pacificu.edu.
APPENDIX B—Recruitment Emails

Dear Colleague,

I am writing to ask that you forward my dissertation research recruitment email to your student body. The recruitment email, which follows the email you are currently reading, contains a link that allows students to navigate directly to my survey at surveymonkey.com. You can cut and paste this email directly into a new mail window.

The suggested subject line, to captivate students, is:

Please Participate in a Brief, Interesting Online Study

I am conducting research related to PsyD students’ knowledge of factors that affect psychotherapy outcomes. I am interested in collecting data from APA-approved PsyD programs that have a clinical emphasis. In the future, the results of this research could be used as part of an assessment in the evaluation of curricula used in PsyD programs.

Participants in this study will remain anonymous. The results will be reported in aggregate form only, and responses will not be associated with the academic institutions of the respondents.

If you have any other questions, or wish to find out about the results of the study, please contact me at the email address below.

Thanks for your help!

Alec Wilson
Pacific University
School of Professional Psychology
Wils8278@pacificu.edu
(503) 757-6259
Dear Colleagues,

I am writing to ask that you participate in a brief and interesting research study.

I am conducting research related to PsyD students’ knowledge of factors that affect psychotherapy outcomes. In the future, the results of this research could be used as part of an assessment in the evaluation of curricula used in PsyD programs.

Please take 15 minutes to navigate to the link below and participate in the study.

If you are a current PsyD student or PsyD pre-doctoral intern, in a PsyD program with a clinical emphasis, 18 years or older, you qualify to participate.

https://www.surveymonkey.com/s.aspx?sm=L195iFDWgH_2b4mnF3eN84uA_3d_3d

Participants in this study will remain anonymous. The results will be reported in aggregate form only, and responses will not be associated with the academic institutions of the respondents.

If you have any other questions, or wish to find out about the results of the study, please contact me at the email address below.

Thanks for your time!

Alec Wilson, M.S.
Pacific University
School of Professional Psychology
Wils8278@pacificu.edu
(503) 757-6259
APPENDIX C—Survey Results, Part 1

Detailed Item Analysis of Statements about Factors that Contribute or Relate to Therapy Outcomes

See Table 1 for a summary of the results in this section.

Each survey statement is numbered and presented in italics.

Each statement in this section was rated on 1-7 scale, with “Don’t Know” as an option. A ‘1’ indicates the respondent feels the statement is not supported in the research literature. A ‘7’ indicates the respondent feels the statement is strongly supported in the research literature. A ‘4’ indicates that the respondent is familiar with the literature that pertains to the statement, but feels it is equivocal with regard to the statement.

For each survey statement mean, mode, and standard deviations are given. The number and percentage of respondents who chose “Don’t Know” as a response is noted for each statement. Respondents who chose “Don’t Know” were grouped separately and these responses were not scored or included in the calculation of other group statistics. Mean scores and standard deviations for respondent groups labeled Integrative, Cognitive Behavioral, and Other therapy orientations are given for each statement. The Integrative group was made up of respondents who chose “Integrative” as the best descriptor for their orientation to practice and by those who listed specific integrative modalities such as “cognitive/behavioral/psychodynamic.” The Cognitive Behavioral group was made up only of students who selected cognitive behavioral as their orientation of choice. To ensure adequate group size (Keppel, 1991) the “Other” group was made up of respondents who endorsed specific orientations to therapy other than cognitive behavioral or integrative. Additionally, mean group scores for respondents in years 1-4 of their
Psy.D. program are given for each statement, and the results of one-way analysis of variance (ANOVA) that examined differential responses by year is provided. Respondents in the “Forth Year” group include all respondents in the forth year of their Psy.D. program and beyond. When available, the mean scores and standard deviations for experts and practitioners polled in the Boisevert and Faust (2003, 2006) studies for the same statement are provided. All reference to “psychology practitioners” and “experts” in the discussion below refer to the practitioner and expert groups surveyed in those studies. Independent groups two-tailed T-Tests (alpha=.05) were run that compared all groups to each other. Significant results are reported.
1) The client’s level of adherence to treatment is the best predictor of therapy outcomes.

N: 156

Mean: 4.14

Mode: 5 (40 responses)

Standard Deviation: 1.60

Don’t Know responses: 7 (4.5%).

Integrative mean: 4.02 (n=57, SD=1.61, 5 Don’t Know)

Cognitive Behavioral mean: 4.57 (n=40, SD=1.30, 0 Don’t Know)

Other orientations mean: 3.96 (n=59, SD=1.70, 2 Don’t Know)

First Year mean: 4.42 (n=29, SD=1.55, 3 Don’t Know)

Second Year mean: 4.33 (n=35, SD=1.62, 2 Don’t Know)

Third Year mean: 3.92 (n=39, SD=1.83, 2 Don’t Know)

Forth Year mean: 4.05 (n=53, SD=1.39, 0 Don’t Know)

One-way ANOVA for response by year: r² = .002, F(1,155) = .274, p = .602

T-tests between groups: No significant differences.
2) The client’s social support system is a strong predictor of a client’s ability to benefit from therapy.

N: 156  
Mean: 5.15  
Mode: 6 (51 responses)  
Standard Deviation: 1.33  
Don’t Know responses: 5 (3.2%).

Integrative mean: 5.33  (n=57, SD=1.17, 2 Don’t Know)  
Cognitive Behavioral mean: 5.20  (n =40, SD=1.30, 0 Don’t Know)  
Other orientations mean: 4.96  (n=59, SD=1.55, 3 Don’t Know)

First Year mean: 4.90  (n=29, SD=1.31, 0 Don’t Know)  
Second Year mean: 5.41  (n=35, SD=1.13 , 3 Don’t Know)  
Third Year mean: 4.82  (n=39, SD=1.68 , 0 Don’t Know)  
Forth Year mean: 5.39  (n=53, SD=1.20, 2 Don’t Know)

One-way ANOVA for response by year: r² = .003, F(1,155) = .394, p = .531

Expert mean: 4.90  (n=12, SD=.99)
Practitioners’ mean: 5.64 (n=181, SD=.89)

T-tests between groups: No significant differences.

3) In general, different therapy orientations achieve similar outcomes.

N: 156  Mean: 5.48
Mode: 6 (51 responses)  Standard Deviation: 1.67
Don’t Know responses: 2 (1.3%).

Integrative mean: 5.74 (n=57, SD=1.44, 2 Don’t Know)
Cognitive Behavioral mean: 5.22 (n=40, SD=1.53, 0 Don’t Know)
Other orientations mean: 5.41 (n=59, SD=1.49, 0 Don’t Know)

First Year mean: 5.43 (n=29, SD=1.48, 1 Don’t Know)
Second Year mean: 5.23 (n=35, SD=1.72, 0 Don’t Know)
Third Year mean: 5.87 (n=39, SD=1.97, 1 Don’t Know)
Forth Year mean: 5.39 (n=53, SD=1.52, 0 Don’t Know)

One-way ANOVA for response by year: $r^2 = .001$, $F(1,155) = .111$, $p = .739$

Expert mean: 6.0 (n=12, SD=1.04)
Practitioners’ mean: 4.46 (n=181, SD=1.64)
T-tests between groups: The practitioners’ mean is significantly different from both the experts’ mean and the students’ mean.

Overall student mean vs. Practitioner mean: $T(335)=5.65, p<.0001$

Expert mean vs. Practitioner mean: $T(191)=3.20, p=.0016$

4) People change more because of common elements rather than specific elements associated with therapies.

N: 156  
Mean: 5.26  
Mode: 6 (44 responses)  
Standard Deviation: 1.44  
Don’t Know responses: 18 (11.7%).

Integrative mean: 5.35  
(n=57, SD=1.64, 9 Don’t Know)

Cognitive Behavioral mean: 5.03  
(n=40, SD=1.54, 5 Don’t Know)

Other orientations mean: 5.34  
(n=59, SD=1.16, 4 Don’t Know)

First Year mean: 4.86  
(n=29, SD=1.65, 1 Don’t Know)

Second Year mean: 5.50  
(n=35, SD=1.20, 7 Don’t Know)

Third Year mean: 5.85  
(n=39, SD=.96, 5 Don’t Know)

Forth Year mean: 4.96  
(n=53, SD=1.58, 5 Don’t Know)

One-way ANOVA for response by year: $r^2 = .000, F(1, 155) = .064, p = .80$
5) Most of the therapy outcome variance can be accounted for by differences in specific therapeutic techniques.

N: 156
Mean: 2.32
Mode: 2 (54 responses)
Standard Deviation: 1.23
Don’t Know responses: 8 (5.2%).

Integrative mean: 2.21 (n=57, SD=1.13, 4 Don’t Know)
Cognitive Behavioral mean: 2.59 (n=40, SD=1.33, 1 Don’t Know)
Other orientations mean: 2.25 (n=59, SD=1.24, 3 Don’t Know)

First Year mean: 2.33 (n=29, SD=1.21, 2 Don’t Know)
Second Year mean: 2.67 (n=35, SD=1.29, 2 Don’t Know)
Third Year mean: 1.84 (n=39, SD=.87, 2 Don’t Know)
Forth Year mean: 2.45 (n=53, SD=1.35, 2 Don’t Know)

One-way ANOVA for response by year: $r^2 = .003$, $F(1, 155) = .523$, $p = .471$

T-tests between groups: No significant differences.
6) The rating of the therapeutic alliance by the client is the best predictor of therapy outcomes.

N: 156  Mean: 5.77

Mode: 6 (58 responses)  Standard Deviation: 1.14

Don’t Know responses: 5 (3.2%).

Integrative mean: 5.84  (n=57, SD=1.15, 2 Don’t Know)

Cognitive Behavioral mean: 5.38  (n=40, SD=1.23, 1 Don’t Know)

Other orientations mean: 5.98  (n=59, SD=1.03, 2 Don’t Know)

First Year mean: 5.53  (n=29, SD=1.17, 1 Don’t Know)

Second Year mean: 6.06  (n=35, SD=.79, 2 Don’t Know)

Third Year mean: 5.86  (n=39, SD=1.36, 2 Don’t Know)

Forth Year mean: 5.66  (n=53, SD=1.14, 0 Don’t Know)

One-way ANOVA for response by year: r² = .001, F(1, 155) = .151, p = .698

T-tests between groups: No significant differences.
7) Therapy is helpful to the majority of clients.

N: 156  
Mean: 5.09

Modes: 4, 5, 6 (43, 43, and 42 responses)  
Standard Deviation: 1.15

Don’t Know responses: 5 (3.2%).

Integrative mean: 5.07  
(n=57, SD=1.22, 1 Don’t Know)

Cognitive Behavioral mean: 5.20  
(n=40, SD=1.20, 1 Don’t Know)

Other orientations mean: 5.02  
(n=59, SD=1.05, 3 Don’t Know)

First Year mean: 5.61  
(n=29, SD=1.03, 1 Don’t Know)

Second Year mean: 5.03  
(n=35, SD=.85, 2 Don’t Know)

Third Year mean: 5.02  
(n=39, SD=1.27, 0 Don’t Know)

Forth Year mean: 4.79  
(n=53, SD=1.23, 2 Don’t Know)

One-way ANOVA for response by year: $r^2 = .010, F(1,155) = 1.58, p = .210$

Expert mean: 6.33  
(n=12, SD=.49)

Practitioners’ mean: 5.44  
(n=181, SD=1.59)
T-tests between groups: All student group means are significantly different from the expert mean. Additionally, the First Year group mean and the Forth Year group mean are significantly different from each other. (Two-tailed T-tests, alpha=.05).

Overall student mean vs. Expert mean: \( T(166)=3.70, p=.0003 \)
Integrative mean vs. Expert mean: \( T(67)=3.50, p=.0008 \)
Cognitive Behavioral mean vs. Expert mean: \( T(50)=3.16, p=.0027 \)
Other orientations mean vs. Expert mean: \( T(69)=4.21, p<.0001 \)
First Year mean vs. Expert mean: \( T(39)=2.30, p=.0269 \)
Second Year mean vs. Expert mean: \( T(45)=5.00, p<.0001 \)
Third Year mean vs. Expert mean: \( T(49)=3.47, p=.0011 \)
Forth Year mean vs. Expert mean: \( T(63)=4.24, p<.0001 \)
First Year mean vs. Forth Year mean: \( T(80)=3.05, p=.0031 \)
8) Many problems respond better to specific therapy techniques compared to nonspecific techniques.

N: 156  
Mean: 4.44

Mode: 4 (34 responses)  
Standard Deviation: 1.62

Don’t Know responses: 16 (10.4%).

Integrative mean: 4.16 (n=57, SD=1.71, 7 Don’t Know)

Cognitive Behavioral mean: 4.91 (n=40, SD=1.50, 5 Don’t Know)

Other orientations mean: 4.40 (n=59, SD=1.57, 4 Don’t Know)

First Year mean: 4.71 (n=29, SD=1.78, 1 Don’t Know)

Second Year mean: 4.25 (n=35, SD=1.48, 7 Don’t Know)

Third Year mean: 4.28 (n=39, SD=1.64, 4 Don’t Know)

Forth Year mean: 4.51 (n=53, SD=1.61, 4 Don’t Know)

One-way ANOVA for response by year: \( r^2 = .001, F(1,155) = .112, p = .739 \)

Expert mean: 3.17 (n=12, SD=1.27)

Practitioners’ mean: 5.23 (n=181, SD=1.16)
T-tests between groups: The overall group mean for students is significantly different from both the expert mean and the practitioner mean for this statement. The expert and practitioner group means are also significantly different. Additionally, the means for both the Cognitive Behavioral and Other orientations groups are significantly different from the expert mean, but the mean for the Integrative group is not. Finally, the means for the First through Forth year student groups are all significantly different from the expert mean. (Two-tailed T-tests, alpha=.05).

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<tr>
<th>Comparison</th>
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<th>p-value</th>
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<tr>
<td>Student mean vs. Expert mean:</td>
<td>T(166)=2.65</td>
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<td>Student mean vs. Practitioner mean:</td>
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<td>&lt;.0001</td>
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<td>Practitioner mean vs. Expert mean:</td>
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<td>Cognitive Behavioral mean vs Expert mean:</td>
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<td>Other orientations mean vs Expert mean:</td>
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<td>.0133</td>
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<td>First Year mean vs. Expert mean:</td>
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<td>T(49)=2.15</td>
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<tr>
<td>Forth Year mean vs. Expert mean:</td>
<td>T(63)=2.69</td>
<td>.0091</td>
</tr>
</tbody>
</table>
9) Of the factors that account for therapeutic outcome variance, extratherapeutic factors contribute most.

N: 156  
Mean: 4.68  
Mode: 5 (31 responses)  
Standard Deviation: 1.55  
Don’t Know responses: 26 (16.9%).

Integrative mean: 4.84 (n=57, SD=1.61, 7 Don’t Know)  
Cognitive Behavioral mean: 4.26 (n=40, SD=1.61, 5 Don’t Know)  
Other orientations mean: 4.84 (n=59, SD=1.40, 14 Don’t Know)  

First Year mean: 4.73 (n=29, SD=1.43, 3 Don’t Know)  
Second Year mean: 4.33 (n=35, SD=1.44, 8 Don’t Know)  
Third Year mean: 4.79 (n=39, SD=1.56, 6 Don’t Know)  
Forth Year mean: 4.79 (n=53, SD=1.69, 9 Don’t Know)  

One-way ANOVA for response by year: $r^2 = .002, F(1, 155) = .329, p = .567$

T-tests between groups: No significant differences.
10) The expectation effect contributes to therapy outcomes as much or more than specific techniques.

N: 156  
Mean: 4.94  
Mode: 5 (56 responses)  
Standard Deviation: 1.11  
Don’t Know responses: 17 (11%).

Integrative mean: 4.86  (n=57, SD=1.15, 6 Don’t Know)  
Cognitive Behavioral mean: 5.03  (n=40, SD=1.32, 5 Don’t Know)  
Other orientations mean: 4.96  (n=59, SD=.94, 6 Don’t Know)

First Year mean: 5.04  (n=29, SD=1.12, 5 Don’t Know)  
Second Year mean: 4.97  (n=35, SD=1.06, 1 Don’t Know)  
Third Year mean: 4.91  (n=39, SD=1.24, 5 Don’t Know)  
Forth Year mean: 4.89  (n=53, SD=1.09, 6 Don’t Know)

One-way ANOVA for response by year: \( r^2 = .010 \), \( F(1, 155) = 1.49, p = .223 \)

T-tests between groups: No significant differences.
11) Specific techniques contribute more to therapy outcomes than extratherapeutic factors.

N: 156 Mean: 2.90
Mode: 3 (33 responses) Standard Deviation: 1.35
Don’t Know responses: 31 (20.1%).

Integrative mean: 2.68 (n=57, SD=1.37, 10 Don’t Know)
Cognitive Behavioral mean: 3.18 (n=40, SD=1.24, 7 Don’t Know)
Other orientations mean: 2.93 (n=59, SD=1.40, 14 Don’t Know)

First Year mean: 2.87 (n=29, SD=1.26, 5 Don’t Know)
Second Year mean: 2.93 (n=35, SD=1.27, 7 Don’t Know)
Third Year mean: 2.84 (n=39, SD=1.37, 7 Don’t Know)
Forth Year mean: 2.95 (n=53, SD=1.48, 12 Don’t Know)

One-way ANOVA for response by year: \( r^2 = .000 \), \( F(1, 155) = .065 \), \( p = .799 \)

T-tests between groups: No significant differences.

12) Most therapists learn more about effective therapy techniques from their experience
than from the research.

N:  156     Mean:  5.21
Mode:  6 (51 responses)     Standard Deviation:  1.51
Don’t Know responses:  20 (13%).

Integrative mean:  5.10     (n=57, SD=1.75, 9 Don’t Know)
Cognitive Behavioral mean:  4.70     (n=40, SD=1.54, 3 Don’t Know)
Other orientations mean:  5.73     (n=59, SD=1.04, 8 Don’t Know)

First Year mean:  5.69     (n=29, SD=1.29, 6 Don’t Know)
Second Year mean:  5.00     (n=35, SD=1.59, 4 Don’t Know)
Third Year mean:  5.17     (n=39, SD=1.46, 4 Don’t Know)
Forth Year mean:  5.17     (n=53, SD=1.59, 6 Don’t Know)

One-way ANOVA for response by year:  r² = .002, F(1, 155) = .249, p = .619

Expert mean:  5.50     (n=12, SD=1.57)
Practitioners’ mean:  5.05     (n=181, SD=1.34)

T-tests between groups:  The Cognitive Behavioral mean and the Other orientations mean are significantly different from each other. (Two-tailed T-test, alpha=.05).
Cognitive Behavioral mean vs. Other orientations mean: $T(97)=3.97$, $p=.0001$

13) Common factors contribute to therapy outcomes more than specific techniques.

N: 156

Mean: 5.33

Mode: 6 (40 responses)

Standard Deviation: 1.29

Don’t Know responses: 16 (10.4%).

Integrative mean: 5.40 (n=57, SD=1.35, 5 Don’t Know)

Cognitive Behavioral mean: 4.83 (n=40, SD=1.40, 4 Don’t Know)

Other orientations mean: 5.61 (n=59, SD=1.05, 7 Don’t Know)

First Year mean: 5.37 (n=29, SD=1.28, 5 Don’t Know)

Second Year mean: 5.41 (n=35, SD=1.24, 3 Don’t Know)

Third Year mean: 5.64 (n=39, SD=1.29, 3 Don’t Know)

Forth Year mean: 5.04 (n=53, SD=1.30, 5 Don’t Know)

One-way ANOVA for response by year: $r^2 = .004$, $F(1, 155) = .677$, $p = .412$

T-tests between groups: The Cognitive Behavioral mean is significantly different from both the Other orientations mean and the Integrative mean for this statement. (Two-tailed T-tests, alpha=.05).
Cognitive Behavioral mean vs. Other orientations mean: $T(97)=3.16, p=.0021$

Cognitive Behavioral mean vs. Integrative mean: $T(95)=2.01, p=.0473$
APPENDIX D—Survey Results, Part 2

Detailed Item Analysis of Respondents’ Perceptions of their Graduate School Training and their Perceived Familiarity with the Major Factors for Psychotherapy Outcome

See Table 2 for a summary of results for this section.

Each survey statement is numbered and presented in italics.

Each statement in this survey section was rated on a 1-7 scale, with 1 meaning the respondent “disagrees strongly” with the given statement, 7 meaning they “agree strongly” with it, and a 4 rating meaning that they have a “neutral” view of the statement.

For each survey statement mean, mode, and standard deviation scores are given that include all 156 responses for that statement. Mean scores and standard deviations for respondent groups who endorsed Integrative, Cognitive Behavioral, and Other therapy orientations are given for each statement. Additionally, mean group scores for respondents in years 1-4 of their Psy.D. program are given for each statement. Respondents in the “Forth Year” group include all respondents in the forth year of their Psy.D. program and beyond. Independent groups two-tailed T-Tests (alpha=.05) were run that compared all respondent groups to each other. Significant results are reported. The responses of the “Forth Year” group for different statements were compared using dependent groups T-tests (alpha=.05) in order to capture the perceptions of students with significant academic experience in their programs. Significant results are reported. Finally, the results one-way analysis of variance (ANOVA) that examined differential responses for respondents in years 1-4 of their Psy.D. program is given for each statement.

14) I have taken one or more classes that emphasized specific elements of therapies and their
Contribution to therapy outcome. (Specific elements include techniques, manualized treatments and protocols, etc.)

- N: 156  Mean: 5.50
- Standard Deviation: 1.79  Mode: 7 (61 responses)

Integrative mean: 5.27  (n=57, SD=1.81)
Cognitive Behavioral mean: 5.77  (n=40, SD=1.64)
Other orientations mean: 5.59  (n=59, SD=1.89)

First Year mean: 4.48  (n=29, SD=2.10)
Second Year mean: 5.54  (n=35, SD=1.93)
Third Year mean: 5.82  (n=39, SD=1.65)
Forth Year mean: 5.79  (n=53, SD=1.43)

One-way ANOVA for response by year: $r^2 = .037$, $F(1, 155) = 5.97$, $p = .016$

T-tests between groups: The First Year group mean is significantly different from the overall student mean and from the group mean scores generated by each other year. (Two-tailed T-tests, alpha=.05).

First Year vs. Second Year: T(62)=2.10, p=.0398
First Year vs. Third Year: T(66)=2.95, p=.0044
First Year vs. Forth Year: $T(80)=3.35$, $p=.0012$

15) *I have taken one or more classes that emphasized common elements between therapies and their contribution to therapy outcome. (Common elements include alliance building, dialogue, empathy, etc.)*

N: 156  
Mean: 5.57  
Standard Deviation: 1.77  
Mode: 7 (69 responses)

Integrative mean: 5.33 (n=57, SD=1.84)  
Cognitive Behavioral mean: 5.77 (n=40, SD=1.62)  
Other orientations mean: 5.74 (n=59, SD=1.81)

First Year mean: 5.34 (n=29, SD=1.93)  
Second Year mean: 5.51 (n=35, SD=2.09)  
Third Year mean: 5.61 (n=39, SD=1.89)  
Forth Year mean: 5.70 (n=53, SD=1.35)

One-way ANOVA for response by year: $r^2 = .001$, $F(1, 155) = .190$, $p = .663$

T-tests between groups: No significant differences.

16) *I have taken one or more classes that emphasized the expectation effect and its contribution*
to therapy outcome. (The expectation effect relates to the client’s belief that therapy will be helpful to him or her.)

N: 156  
Mean: 4.04

Standard Deviation: 1.99  
Modes: 5, 4, 1 (32, 28, and 26 responses)

Integrative mean: 4.28 (n=57, SD=2.11)

Cognitive Behavioral mean: 4.21 (n=40, SD=1.81)

Other orientations mean: 3.52 (n=59, SD=1.92)

First Year mean: 3.83 (n=29, SD=2.05)

Second Year mean: 4.06 (n=35, SD=2.22)

Third Year mean: 4.13 (n=39, SD=2.12)

Forth Year mean: 4.07 (n=53, SD=1.73)

One-way ANOVA for response by year: $r^2 = .002$, $F(1, 155) = .339$, $p = .561$

T-tests between groups: The Other and Integrative group means are significantly different from each other. (Two-tailed test, Alpha=.05).

Integrative mean vs. Other mean: $T(114)=2.03$, $p=.0447$
17) *I have taken one or more classes that emphasized extratherapeutic factors and their contribution to therapy outcome. (Extratherapeutic factors include client stage-of-change, social supports, etc.)*

N: 156  
Mean: 4.68  
Standard Deviation: 1.85  
Mode: 7 (33 responses)

Integrative mean: 5.04  
(n=57, SD=1.93)

Cognitive Behavioral mean: 4.63  
(n=40, SD=1.68)

Other orientations mean: 4.20  
(n=59, SD=1.79)

First Year mean: 4.24  
(n=29, SD=2.01)

Second Year mean: 4.57  
(n=35, SD=1.87)

Third Year mean: 4.79  
(n=39, SD=2.07)

Forth Year mean: 4.90  
(n=53, SD=1.56)

One-way ANOVA for response by year: $r^2 = .012, F(1, 155) = 1.85, p = .175$

T-tests between groups: The Integrative and Other group means are significantly different. (Two-tailed tests, Alpha=.05).

Integrative vs. Other group mean: $T(114)=2.43, p=.0167$
18) *I am familiar with research of specific therapy elements and their contribution to therapy outcome.*

N: 156  
Mean: 4.63  
Standard Deviation: 1.54  
Mode: 5 (50 responses)

Integrative mean: 4.67 (n=57, SD=1.42)  
Cognitive Behavioral mean: 4.79 (n=40, SD=1.57)  
Other orientations mean: 4.41 (n=59, SD=1.68)

First Year mean: 4.38 (n=29, SD=1.68)  
Second Year mean: 4.20 (n=35, SD=1.71)  
Third Year mean: 4.87 (n=39, SD=1.43)  
Forth Year mean: 4.87 (n=53, SD=1.36)

One-way ANOVA for response by year: $r^2 = .012$, $F(1, 155) = 1.57$, $p = .212$

T-tests between groups: No significant differences.
19) *I am familiar with research of common elements between therapies and their contribution to therapy outcome.*

N: 156
Mean: 4.81
Standard Deviation: 1.47 Mode: 5 (58 responses)

Integrative mean: 4.88 (n=57, SD=1.36)
Cognitive Behavioral mean: 4.70 (n=40, SD=1.57)
Other orientations mean: 4.83 (n=59, SD=1.55)

First Year mean: 4.41 (n=29, SD=1.80)
Second Year mean: 4.60 (n=35, SD=1.54)
Third Year mean: 4.79 (n=39, SD=1.49)
Forth Year mean: 5.19 (n=53, SD=1.13)

One-way ANOVA for response by year: $r^2 = .010$, $F(1, 155) = 1.51$, $p = .220$

T-tests between groups: The First Year and Forth Year group means are significantly different. (Two-tailed test, Alpha=.05).

First vs. Forth Year mean: $T(80)=2.78$, $p=.0068$
20) *I am familiar with research of the expectation effect and its contribution to therapy outcome.*

N: 156  
Mean: 4.02  
Standard Deviation: 1.63  
Mode: 5 (38 responses)

Integrative mean: 4.30  (n=57, SD=1.63)  
Cognitive Behavioral mean: 4.12  (n=40, SD=1.62)  
Other orientations mean: 3.52  (n=59, SD=1.54)

First Year mean: 4.03  (n=29, SD=1.70)  
Second Year mean: 3.88  (n=35, SD=1.78)  
Third Year mean: 3.82  (n=39, SD=1.64)  
Forth Year mean: 4.24  (n=53, SD=1.49)

One-way ANOVA for response by year: $r^2 = .001$, $F(1, 155) = .227$, $p = .634$

T-tests between groups: The Other and Integrative group means are significantly different. (Two-tailed test, Alpha=.05).

Other vs. Integrative group mean: $T(114)=2.65$, $p=.0092$
21) *I am familiar with research of extratherapeutic factors and their contribution to therapy outcome.*

N: 156  Mean: 4.31  
Standard Deviation: 1.67  Mode: 5 (42 responses)

Integrative mean: 4.63  (n=57, SD=1.62)  
Cognitive Behavioral mean: 4.23  (n=40, SD=1.46)  
Other orientations mean: 3.91  (n=59, SD=1.85)  

First Year mean: 3.90  (n=29, SD=2.08)  
Second Year mean: 3.86  (n=35, SD=1.73)  
Third Year mean: 4.54  (n=39, SD=1.41)  
Forth Year mean: 4.66  (n=53, SD=1.47)

One-way ANOVA for response by year: $r^2 = .027$, $F(1, 155) = 4.29$, $p = .040$

T-tests between groups: The Other and Integrative group means are significantly different. The Second Year and Forth year group means are significantly different. (Two-tailed tests, Alpha=.05).

Other vs. Integrative group mean:  $T(114)=2.23$, $p=.0277$  
Second Year vs. Forth Year mean:  $T(86)=2.32$, $p=.0227$
22) As a practitioner/scholar of psychology I believe that effective practice is strengthened by a working knowledge of practice-based research findings.

N: 156  
Mean: 5.84  
Standard Deviation: 1.09  
Mode: 6 (58 responses)

Integrative mean: 5.96  (n=57, SD=.93)
Cognitive Behavioral mean: 5.93  (n=40, SD=1.05)
Other orientations mean: 5.59  (n=59, SD=1.31)

First Year mean: 5.72  (n=29, SD=1.13)
Second Year mean: 5.94  (n=35, SD=1.00)
Third Year mean: 5.82  (n=39, SD=1.29)
Forth Year mean: 5.85  (n=53, SD= .99)

One-way ANOVA for response by year: r² = .000, F(1, 155) = .028, p = .868

T-tests between groups: No significant differences.
23) I have received accurate and balanced training in my Psy.D. program about the different factors that make therapy “work”.

N: 156  Mean: 5.04
Standard Deviation: 1.51  Mode: 6 (50 responses)

Integrative mean: 5.07  (n=57, SD=1.52)
Cognitive Behavioral mean: 5.37  (n=40, SD=1.33)
Other orientations mean: 4.67  (n=59, SD=1.62)

First Year mean: 5.17  (n=29, SD=1.65)
Second Year mean: 4.97  (n=35, SD=1.65)
Third Year mean: 5.13  (n=39, SD=1.57)
Forth Year mean: 4.94  (n=53, SD=1.32)

One-way ANOVA for response by year: r² = .003, F(1, 155) = .469, p = .494

T-tests between groups: The Other and Cognitive Behavioral group means are significantly different. (Two-tailed test, Alpha=.05).

Other vs. Cognitive Behavioral Group means:  T(97)=2.26, p=.0261