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AN INVESTIGATION OF SELF-ASSESSMENT BIAS IN MENTAL HEALTH PROVIDERS[1]

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Summary.—Previous research has consistently found self-assessment bias (an overly positive assessment of personal performance) to be present in a wide variety of work situations. The present investigation extended this area of research with a multi-disciplinary sample of mental health professionals. Respondents were asked to: (a) compare their own overall clinical skills and performance to others in their profession, and (b) indicate the percentage of their clients who improved, remained the same, or deteriorated as a result of treatment with them. Results indicated that 25% of mental health professionals viewed their skill to be at the 90th percentile when compared to their peers, and none viewed themselves as below average. Further, when compared to the published literature, clinicians tended to overestimate their rates of client improvement and underestimate their rates of client deterioration. The implications of this self-assessment bias for improvement of psychotherapy outcomes are discussed.

In a classic study conducted at the General Electric Company, Meyer (1980) asked engineers to self-assess their performance compared to other engineers with similar jobs and salaries. The average engineer rated his performance to be at the 78th percentile compared to peers. Of the 92 engineers studied, only two placed themselves below the 50th percentile. Since this study, similar results have been found in a variety of areas of performance from driving skills to medical practice, suggesting that it is common to think of ourselves as somewhat remarkable compared to others (Dunning, Heath, & Suls, 2004). A consistent finding in this literature is not only that individuals see themselves as more able than statistically probable, but that their self-judgments surpass their ability (Elaad, 2003).

Various reasons for the presence of self-perception bias have been offered. Regardless of the reason for bias and the possibility that bias may have positive consequences under some circumstances, Dunning, *et al*. (2004) concluded that self-assessments of skill, expertise, and knowledge are likely to be inaccurate, and ways to repair these flawed self-assessments should be considered. This conclusion has implications for the practice of psychotherapy. Hansen, Lambert, and Forman (2002) reported

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that in *routine clinical practice* a minority of clients recover or improve using clinically significant change criteria following participation in psychotherapy. The majority of clients do not experience a reliable change, with 5% to 10% showing deterioration at termination. If non-response and deterioration rates are to be reduced, a self-perception bias may be one area for exploration.

In this context, Hannan, Lambert, Harmon, Nielsen, Smart, Shimokawa, *et al.* (2005) examined psychotherapists' ability to predict deterioration in a sample of patients undergoing psychotherapy. These researchers found clinicians were only able to identify 1 of 40 (2.5%) individuals who eventually left treatment worse off than when they began treatment. Therapist estimates of positive outcomes (91%) were more than double those actually found (40%). These authors pointed to the need for clinicians to utilize formal methods—"lab test" results—to track client progress and to pay attention to markers that are predictive of client deterioration during treatment. Resistance to the use of such "lab test" data can be expected to be high in the face of a substantial positive self-assessment bias.

The current study surveyed practicing clinicians to examine: (a) how psychotherapists rate their ability to help clients compared to other psychotherapists, and (b) the extent to which psychotherapists believe their clients improve, remain the same, or deteriorate in psychotherapy.

Method

Participants

A total of 129 mental health professionals in private practice participated in this study. Of these, 39% were men and 60% were women (1% did not specify). The sample was comprised of 12 psychiatrists (9.3%), 34 psychologists (26.4%), 28 professional counselors (21.7%), 37 clinical social workers (28.7%), and 18 marriage and family therapists (14%). The average age of the participants was 53.3 yr., and 66% described themselves as being in full-time private practice.

Procedure

Participants were solicited to complete a survey from each of the five disciplines from online directories. A cover letter describing the purpose of the study was mailed to each individual with a brief survey and a prepaid return envelope. From the potential participant pool of 500 mental health professionals, a total of 129 were returned, yielding a return rate of 26%. The survey included demographic information, and participants were asked to respond to two questions: (1) compared to other mental health professionals within your field (with similar credentials), how would you rate your overall clinical skills and performance in terms of a percentile (0–100%, e.g., 25% = below average, 50% = average, 75% = above

average)? (2) What percentage (0–100%) of your clients gets better (i.e., experience significant symptom reduction) during treatment? What percentage stays the same? What percentage gets worse?

Results

Clinicians rated their skills to be above average compared to other clinicians with similar credentials. On average, they viewed their skills to be at the 80th percentile ($M = 80.59$, $SD = 9.06$). Results of a one-way analysis of variance (Anova) found no significant differences based on educational level of the respondent. The modal rating was at the 75th percentile. None of the respondents self-rated their skills below the 50th percentile, with only 8.4% of the respondents rating their skill below the 75th percentile. Twenty-five percent of the sample self-rated their skill at the 90th percentile or above when compared to their peers.

On average, clinicians believed that 77.01% ($SD = 12.63$) of their clients improved as a result of being in psychotherapy with them, with 3.66% ($SD = 4.91$) deteriorating. Nearly two-thirds (58.4%) of the clinicians believed that 80% or more of their clients improved as a result of being in psychotherapy with them. This included 21.2% believing that 90% or more of their clients improved as a result of psychotherapy. Surprisingly, one clinician indicated that only 25% of his clients improved (this same clinician indicated that 50% remained the same and 25% regressed). Slightly less than half (47.7%) of the sample indicated that none (0%) of their clients regressed.

Discussion

Based on the data from the current sample of psychotherapists, all rated their effectiveness as above average when compared to other psychotherapists in the same discipline. The current investigation replicates the classic study of Meyer (1980) with engineers and with many other samples as summarized by Dunning, *et al.* (2004). That is, psychotherapists are not immune from self-assessment bias in terms of: (a) comparing their own skills to their colleagues' and (b) recognizing the improvement and deterioration rates that likely occur with their clients. Certainly the findings of this study are consistent with the extensive research summarized by Meehl and others, showing that clinical predictions seldom surpass actuarial methods (Meehl, 1954; Grove & Meehl, 1996). Findings are also consistent with long-standing complaints by Eysenck (1985) that therapists overrate the effects of long-term treatments.

In the current investigation, no psychotherapist self-rated his own skill as below average compared to other psychotherapists. Twenty-five percent rated their skills as being at the 90th percentile or above. As Dunning, *et al.* (2004) indicated, these numbers defy statistical possibilities.

Psychotherapists can identify colleagues they believe are below average and would not consider referring a client to them for psychotherapy. At the same time, they are very positive in their estimates of their own abilities.

Perhaps clinicians' judgments of client failure are more important. The findings of the current investigation regarding therapists' perceptions of client improvement and deterioration are potentially problematic. In the current sample of psychotherapists, on average, clinicians probably underestimated client deterioration rates (3.66%), with nearly half (47.7%) of the psychotherapists reporting that none of their clients regressed in their symptoms while in treatment. While nothing is known about how the clients of this sample of psychotherapists actually fared as a result of treatment, the estimates of success are very high and, more importantly, estimates of deterioration are very low compared to research-based rates of change. Hansen, *et al*. (2002) found that in routine care (based on multiple treatment settings from EAP to Community Mental Health and a 6,000-patient sample), only one-third of clients improved and 8% (range = 3–14%) deteriorated. Okiishi, Lambert, Eggett, Nielsen, Dayton, and Vermeersch, (2006), in a study of outcome across 71 therapists, found a proportion of clients deteriorated even within the top 10% of most effective therapists. Outcomes in the Hannan, *et al.* (2005) study were closer to benchmark outcomes reported by Hansen, *et al*. (2002), with client deterioration present across the entire sample of therapists.

Erhlinger and Dunning (2003) found a significant portion of performance estimates were based on a chronic view of a person's ability within a particular domain. They were able to demonstrate how over-reliance on inaccurate self-assessments may result in negative behavioral consequences. There is no reason to believe that psychotherapists and, by proxy, their clients' well-being, would not be subject to the same consequences of overly positive self-assessments. Dunning, *et al*. (2004) stated that, in the underlying self-assessment bias, "people are often motivated to reach flattering conclusions about themselves and their place in the world. Thus, they mold, manage, and massage the feedback the world provides them so that they can construe themselves as lovable and capable people" (p. 78).

Since the outcome of psychotherapy for clients is largely a result of client characteristics such as severity of disturbance, complexity of problems, and contextual variables such as social support, economic problems, physical health setbacks, and the like, self-assessment bias may simply be an unconscious attempt to stay motivated in the face of very difficult client problems and circumstances. Practical constraints, such as heavy caseloads, make it difficult for therapists to take all the actions that might be needed to help clients, as a new client may be arriving shortly. The ther-

apist may substitute a positive view of what a client got from therapy to soften feelings of failing a client.

Whatever motivations may be involved, or whether judgments are simply only based on information collected within the therapeutic setting, the problem is heightened by research suggesting that individuals who are less competent may be the least likely to accurately assess the quality of their performance (John & Robins, 1994; Erhlinger & Dunning, 2003).

Most importantly for the client, therapist self-assessment bias may be at the root of therapists' reluctance to take advantage of advances in "lab test" results that can predict client worsening and lessen the chance that such a phenomenon will be acted upon by the therapist in a timely manner. Several studies have now shown that deterioration can be predicted (e.g., Finch, Lambert, & Schaalje, 2001; Spielmans, Masters, & Lambert, 2006) and that supplying therapists (and clients) with this information can reduce deterioration rates and bolster client recovery (Lambert, Whipple, Vermeersch, Smart, Hawkins, Nielsen, *et al.*, 2002; Hawkins, Lambert, Vermeersch, Slade, & Tuttle, 2004).

As psychotherapists who are truly below average in effectiveness may not recognize that their skills are deficient, or even above-average psychotherapists may not recognize that their patients are regressing, an argument may be made for all psychotherapists to monitor progress and outcome using formal methods rather than clinical judgment. This strategy makes reduction of perceptual bias specific on a case-by-case basis, and easier to implement than efforts to overcome this problem through supervision and related strategies aimed at enhancing self-assessment and self-reflection. The results of the present investigation suggest that due to self-assessment bias, psychotherapists will likely overestimate their skill and positive client outcomes and underestimate client deterioration rates.

Limitation

One limitation of these data is the relatively low return rate. Therefore, these data may not generalize to the broad population of clinicians in private practice. This is especially so with the psychiatrists in the sample where the return rate was especially low. However, while the return rate was less than desired, the results are consistent with what previous literature would suggest on self-assessment bias in other populations, and there is no reason to believe that those who did respond would be especially weak in this area.

REFERENCES

Dunning, D., Heath, C., & Suls, J. (2004) Flawed self-assessment: implications for health, education, and the workplace. *Psychological Science in the Public Interest,* 5, 69-106.

EHRLINGER, J., & DUNNING, D. (2003) How chronic self-views influence (and potentially mislead) estimates of performance. *Journal of Personality and Social Psychology,* 84, 5-17.

ELAAD, E. (2003) Effects of feedback on the overestimated capacity to detect lies and the underestimated ability to tell lies. *Applied Cognitive Psychology,* 17, 349-363.

EYSENCK, H. J. (1985) Psychotherapy effects: real or imaginary? *American Psychologist*, 40, 239-240.

Finch, A. E., Lambert, M. J., & Schaalje, B. G. (2001) Psychotherapy quality control: the statistical generation of expected recovery curves for integration into an early warning system. *Clinical Psychology and Psychotherapy,* 8, 231-242.

GROVE, W. M., & MEEHL, P. E. (1996) Comparative efficiency of informal (subjective, impressionaistic) and formal (mechanical, algorithmic) prediction procedures: the clinical–statistical controversy. *Psychology, Public Policy, and Law,* 2, 293-323.

HANNAN, C., LAMBERT, M. J., HARMON, C., NIELSEN, S. L., SMART, D., SHIMOKAWA, K. W., & SUTTON, S. W. (2005) A lab test and algorithms for identifying clients at risk for treatment failure. *Journal of Clinical Psychology: In Session,* 61, 155-163.

HANSEN, N. B., LAMBERT, M. J., & FORMAN, E. V. (2002) The psychotherapy dose-response effect and its implications for treatment delivery services. *Clinical Psychology: Science and Practice,* 9, 329-343.

HAWKINS, E. J., LAMBERT, M. J., VERMEESCH, D. A., SLADE, K., & TUTTLE, K. (2004) The therapeutic effects of providing patient progress information to therapists and patients. *Psychotherapy Research,* 14, 308-327.

JOHN, O. P., & ROBINS, R. W. (1994) Accuracy and bias in self-perception: individual differences in self-enhancement and the role of narcissism. *Journal of Personality and Social Psychology*, 66, 206-219.

LAMBERT, M. J., WHIPPLE, J. L., VERMEERSCH, D. A., SMART, D. W., HAWKINS, E. J., NIELSEN, S. L., & GOATES, M. (2002) Enhancing psychotherapy outcomes via providing feedback on client treatment response: a replication. *Clinical Psychology and Psychotherapy*, 9, 91-103.

MEEHL, P. E. (1954) *Clinical versus statistical prediction*. Minneapolis, MN: Univer. of Minnesota Press.

MEYER, H. (1980) Self-appraisal of job performance. *Personnel Psychology,* 33, 291-295.

OKIISHI, J. C., LAMBERT, M. J., EGGETT, D., NIELSEN, S. L., DAYTON, D. D., & VERMEERSCH, D. A. (2006) An analysis of therapist treatment effects: toward providing feedback to individual therapists on their patients' psychotherapy outcome. *Journal of Clinical Psychology,* 62, 1157-1172.

SPIELMANS, G. I., MASTERS, K. S., & LAMBERT, M. J. (2006) A comparison of rational versus empirical methods in prediction of negative psychotherapy outcome. *Clinical Psychology & Psychotherapy,* 13, 202-214.

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REFERENCES

Dunning, D., Heath, C., & Suls, J. (2004) Flawed self-assessment: implications for health, education and the workplace. *Psychological Science in the Public Interest*, 5, 69-106.

Ehrlinger, J., & Dunning, D. (2003) How chronic self-views influence (and potentially mislead) estimates of performance. *Journal of Personality and Social Psychology*, 84, 5-17.

Elaad, E. (2003) Effects of feedback on the overestimated capacity to detect lies and the underestimated ability to tell lies. *Applied Cognitive Psychology*, 17, 349-363.

Eysenck, H. J. (1985) Psychotherapy effects: real or imaginary? *American Psychologist*, 40, 239-240.

Finch, A. E., Lambert, M. J., & Schaalje, B. G. (2001) Psychotherapy quality control: the statistical generation of expected recovery curves for integration into an early warning system. *Clinical Psychology and Psychotherapy*, 8, 231-242.

Grove, W. M., & Meehl, P. E. (1996) Comparative efficiency of informal (subjective, informal)

and formal (mechanical, algorithmic) prediction procedures: the clinical-statistical controversy. *Psychology, Public Policy, and Law*, 2, 293-323.

Hannan, C., Lambert, M., Harmon, C., Nielsen, S., Smart, D. & Shimokawa, K. (2005) A lab test and algorithms for identifying clients at risk for treatment failure. *Journal of Clinical Psychology: In Session*, 61, 155-163.

Hansen, N. B., Lambert, M. J., & Forman, E. V. (2002) The psychotherapy dose-response effect and its implications for treatment delivery services. *Clinical Psychology: Science and Practice*, 9, 329-343.

Hawkins, E., Lambert, M., Vermeesch, D., Slade, K., & Tuttle, K. (2004) The therapeutic effects of providing patient progress information to therapists and patients. *Psychotherapy Research*, 14, 308-327.

John, O., & Robins, R. (1994) Accuracy and bias in self-perception: individual differences in self-enhancement and the role of narcissism. *Journal of Personality and Social Psychology*, 66, 206-219.

Lambert, M. J., Whipple, J.L., Vermeersch, D. A., Smart, D. W., Hawkins, E. J., Nielsen, S. L., & Goates, M. (2002). Enhancing psychotherapy outcomes via providing feedback on client treatment response: A replication. *Clinical Psychology and Psychotherapy,9*, 91-103.

Meehl, P. E. (1954) *Clinical versus statistical prediction*. Minneapolis, MN: University of Minnesota Press.

Meyer, H. (1980) Self-appraisal of job performance. *Personnel Psychology*, 33, 291-295.

Okiishi, J. C., Lambert, M. J., Eggett, D., Nielsen, S. L., Dayton, D. D., & Vermeersch, D. A. (2006) An analysis of therapist treatment effects: toward providing feedback to

individual therapists on their patients' psychotherapy outcome. *Journal of Clinical Psychology,* 62, 1157-1172.

Spielmans, G. I., Masters, K. S., & Lambert, M. J. (2006) A comparison of rational versus empirical methods in prediction of negative psychotherapy outcome. *Clinical Psychology & Psychotherapy,* 13, 202-214.

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