

## Does Professional Training Make a Therapist More Effective?

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In a recent review, Hattie, Sharpley, and Rogers (1984) concluded that patients treated by paraprofessional therapists improve more than those treated by professionals. However, this provocative conclusion is based on inappropriate studies and statistical analyses. The present review omitted problematic studies and organized the data to permit valid statistical inference. Unlike Hattie et al., we found that professional and paraprofessional therapists were generally equal in effectiveness. Our analyses also suggested that professionals may be better for brief treatments and older patients, although these differences were slight. Current research evidence does not indicate that paraprofessionals are more effective, but neither does it reveal any substantial superiority for the professionally trained therapist.

In his 1952 critique Eysenck noted the lack of evidence for the efficacy of psychotherapy, and he concluded that it would be premature to formulate guidelines for training psychotherapists. During the intervening years, researchers have responded to Eysenck's challenge by demonstrating convincingly that patients who undergo psychotherapy improve more than those who do not receive treatment (e.g., see Shapiro & Shapiro, 1982; Smith, Glass, & Miller, 1980). However, such evidence concerning the efficacy of psychotherapy does not necessarily indicate the usefulness of professional training programs. For instance, psychotherapy with highly trained therapists might not result in outcomes that are any better than those obtained by untrained therapists. To gauge the benefits of professional training, we also need to know whether trained therapists are more effective than those without such training.

One prominent assessment of this issue was provided by Durlak (1979), who reviewed studies comparing professional therapists with paraprofessionals having no formal training.

On the basis of his review, Durlak reported that "paraprofessionals achieve clinical outcomes equal to or significantly better than those obtained by professionals" (p. 80). This assertion was sharply criticized by Nietzel and Fisher (1981; also see Durlak, 1981), and recently Hattie, Sharpley, and Rogers (1984) attempted to resolve the controversy by conducting a more sophisticated quantitative review of the research evidence. The results of this quantitative review generally supported Durlak's claim, and Hattie et al. concluded from their analyses that "clients who seek help from paraprofessionals are more likely to achieve resolution of their problem than those who consult professionals" (p. 534). If true, this provocative conclusion would raise serious questions about the utility of clinical training.

However, Hattie et al.'s (1984) results are problematic because, as in Durlak's (1979) earlier review, they are based on a number of inappropriate studies. For example, in some of these studies individuals labeled as professional had no formal psychological training, and in other studies the designation of professional and paraprofessional appeared arbitrary. Furthermore, in some of the studies the treatment did not involve psychological counseling or psychotherapy.

An additional difficulty with Hattie et al.'s (1984) review is that conclusions were based on standard tests of statistical significance even though the data consisted of nonindependent observations. As work by Glass, McGaw, and Smith (1981, chap. 6) has suggested, the use

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of standard inferential tests on such nonindependent data can vastly overestimate the statistical significance of a finding.

Given these problems, the aim of the present review was to provide a more appropriate evaluation of the relative effectiveness of professional and paraprofessional therapists. In our analysis we avoided the difficulties that have plagued earlier reviews. We carefully screened the relevant research, omitting problematic studies included by Durlak (1979) and Hattie et al. (1984). Moreover, we organized the data so that it would permit valid statistical inference.

## Method

### Studies

In their recent review, Hattie et al. (1984) examined a total of 43 studies. These included 39 reviewed earlier by Durlak (1979) and 4 later identified by Nietzel and Fisher (1981). However, we discovered serious problems in 11 of these studies, and we excluded them from the present analysis (see Table 1).

Six studies were omitted because the classification of either the professionals or the paraprofessionals was problematic. In 3 of these studies (Brown & Myers, 1975; Murry, 1972; Zultowski & Catron, 1976), the therapists labeled professionals were college professors who had no training in mental health. In another study (Jensen, 1961), some of the therapists classified as paraprofessionals were trained social workers and nurses. In a study examining the behavioral treatment of obesity (Penick, Filion, Fox, & Stunkard, 1971), a medical student was identified as the professional, whereas an experimental psychologist with a strong

background in learning theory was considered the paraprofessional. Finally, in a study assessing the treatment of stutterers (Moleski & Tosi, 1976), the therapist designated as the paraprofessional was a trained speech pathologist and the professional was only an intern in psychiatry.

Two studies were inappropriate because the treatment was not a form of psychotherapy. In one of these studies (Lamb & Clack, 1974), the procedure considered as the treatment was simply an orientation to a counseling center. In the other study (Zunker & Brown, 1966), the authors explicitly stated that their academic guidance program did not include psychological counseling.

Two studies (De Leon & Mandell, 1966; Werry & Cöhrssen, 1965) were excluded because the paraprofessionals' participation in treatment was minimal and did not require psychological skills. In both cases the paraprofessionals were the parents of enuretic children; their only contribution to treatment was that they turned on a bed-buzzer apparatus each night.

One further study (Knickerbocker & McGee, 1973) was omitted because it reported measures of only therapy process and not treatment outcome.

Given these 11 exclusions, our analyses were based on the remaining sample of 32 studies (see the Appendix for a list of the studies).

### Estimate of Effect Size

For each study the difference in the effectiveness of professional and paraprofessional therapists was expressed in terms of a standardized measure of effect size. The effect size was computed as

$$\frac{m_1 - m_2}{s} \quad (1)$$

where  $m_1$  is the mean outcome of the professional therapists,  $m_2$  is the corresponding mean for the paraprofessionals, and  $s$  is the pooled within-group standard deviation.

Our measure of effect size differs in two ways from that used by Hattie et al. (1984). First, the effect size is coded so that it is positive when the professionals are better and negative when the paraprofessionals are better. Second, unlike Hattie et al., we used the pooled within-group standard deviation instead of just the standard deviation of the professional therapists. As in previous work (Berman, Miller, & Massman, 1985; Miller & Berman, 1983; Nicholson & Berman, 1983), we chose to use the pooled value because it typically provides a better estimate of the population parameter.

In most studies the effect sizes were calculated directly from reported means and standard deviations. When this information was not available, the effect size was estimated from other statistics reported in the study. The various techniques for estimating such effect sizes are described in previous work (e.g., Miller & Berman, 1983; also see Glass et al., 1981, chap. 5).

In some studies, researchers would report that the results for certain outcome measures were nonsignificant, but they would give no other information. In these cases, calculation of an exact effect size was not possible. However, excluding such outcome measures from the analyses would have artificially inflated the overall estimate of effect size because investigators are more likely to provide full information on those measures that demonstrate large or statistically

Table 1  
*Problematic Studies Excluded From the Present Analysis*

Problem	Study
Questionable classification of professionals and/or paraprofessionals	Brown & Myers (1975)
	Jensen (1961)
	Moleski & Tosi (1976)
	Murry (1972)
	Penick, Filion, Fox, & Stunkard (1971)
	Zultowski & Catron (1976)
Treatment not psychotherapy	Lamb & Clack (1974)
	Zunker & Brown (1966)
Paraprofessionals only minimally involved in treatment	De Leon & Mandell (1966)
	Werry & Cöhrssen (1965)
No measure of outcome	Knickerbocker & McGee (1973)

significant treatment effects. Therefore, if a finding for an outcome measure was described as nonsignificant but no other information was provided, we estimated the effect size on that outcome measure to be zero.

Hedges (1982) has identified a small-sample bias in the estimate of effect size and provided a correction for the problem (see Hedges, 1982, Formula 4). All effect sizes reported in our analyses were adjusted using this correction procedure.

### Analysis

In many of the studies, the comparison of professionals and paraprofessionals was assessed by more than one outcome measure. In these cases, a mean effect size was obtained for the study by averaging the effect sizes from each of the individual measures. This averaging procedure ensured that each study could be represented in the analysis by a single overall effect size.

We should emphasize that our procedure for averaging effect sizes differs sharply from the approach used by Hattie et al. (1984). In Hattie et al.'s review, the effect size derived from each outcome measure was treated as a separate observation in the analysis. Unfortunately, an analysis based on such nonindependent observations can seriously underestimate error variance and thereby invalidate standard tests of significance (e.g., see Glass et al., 1981, chap. 6). Furthermore, such an analysis arbitrarily weights studies according to the number of outcome measures reported. We avoided both these problems by always using the study as the basic unit in each analysis.

### Results

Table 2 presents the overall effect sizes for comparisons between professionals and paraprofessionals. A positive effect size indicates that the professionals were better, and a negative effect size indicates that the paraprofessionals were better. As can be seen, our analysis reveals that the two groups of therapists were equally effective at both the end of treatment and a subsequent follow-up assessment. In both cases the mean effect size from the reviewed studies was strikingly close to zero. Moreover, among studies with a follow-up evaluation, the effect size at posttreatment ( $M = 0.07$ ) was nearly identical to that observed at follow-up ( $M = 0.09$ ),  $t(12) = 0.19$ ,  $p = .9$ . Given the small number of studies reporting follow-up information, we conducted further analyses on only the posttreatment data.<sup>1</sup>

In a first set of analyses, we examined whether the relative effectiveness of professionals and paraprofessionals might vary for different types of problems or treatments. When we classified studies according to the four most commonly occurring categories of

Table 2  
*Differences Between Professionals and Paraprofessionals at Posttreatment and Follow-Up*

Assessment	N of studies	Effect size <sup>a</sup>	
		M	SD
Posttreatment	32	-0.02	0.30
Follow-up	13	0.09	0.30

<sup>a</sup> Positive effect sizes indicate that professionals were more effective; negative effect sizes indicate that paraprofessionals were more effective.

patient complaint (social adjustment, phobia, psychosis, and obesity), we found no reliable difference among the separate effect sizes,  $F(3, 17) = 1.37$ ,  $p = .3$ . We also failed to detect any systematic difference when we divided the studies into five forms of treatment (behavioral, cognitive-behavioral, humanistic, crisis intervention, and undifferentiated counseling),  $F(4, 21) = 0.88$ ,  $p = .5$ . Finally, effect sizes obtained from studies in which treatment was administered individually ( $M = -0.03$ ) were essentially the same as those observed when treatment was conducted in a group format ( $M = -0.02$ ),  $t(27) = 0.03$ ,  $p = .98$ .

Treatment outcome was often assessed in a study by more than one type of measure or from more than one person. We therefore examined whether results differed according to the type or source of the outcome measure. Comparisons between measures were conducted in a pairwise fashion; each analysis included only those studies reporting both of the measures being compared. These paired comparisons yielded no reliable differences in the effect size found with five different types of outcome (symptom distress, global adjustment, social adjustment, work-school adjustment, and personality traits), all  $ps > .4$ . Similarly, there were no statistically significant differences between four different sources of outcome (patient, therapist, independent observer, and behavioral indicator), all  $ps > .3$ .

The relative effectiveness of professionals and paraprofessionals did appear to vary depending on the length of the therapy. We found

<sup>1</sup> As analyses by Nicholson and Berman (1983) suggest, these posttreatment results should be highly predictive of findings at a later follow-up evaluation.

Table 3  
*Differences Between Professionals and Paraprofessionals for Studies With Different Lengths of Treatment*

Weeks of treatment	N of studies	Effect size <sup>a</sup>	
		M	SD
1-4	5	0.19	0.39
5-12	12	0.05	0.22
Over 12	10	-0.19	0.26

<sup>a</sup> Positive effect sizes indicate that professionals were more effective; negative effect sizes indicate that paraprofessionals were more effective.

that the number of weeks of treatment (transformed by the natural log to normalize the distribution) was correlated with the effect size,  $r(25) = -.43, p = .03$ . As Table 3 indicates, professionals were somewhat more effective in studies using short treatments, and paraprofessionals were somewhat more effective in studies involving longer therapies.

There was also some suggestion that effect sizes differed depending on the age of the patient sample,  $r(26) = .34, p = .07$ . As can be seen in Table 4, professionals achieved better outcomes with older patients, whereas paraprofessionals were superior with younger patients. However, we should note that the professionals in these studies tended to be older ( $M$  age = 31.8 years) than the paraprofessionals ( $M$  age = 23.3 years).

One of the benefits of training is that it provides the professional with established techniques for conducting therapy. An untrained therapist would presumably not be familiar with these techniques; therefore, the treatment offered by a professional might well differ from that given by a paraprofessional. In a few of the reviewed studies, this natural difference in treatment techniques was exacerbated because the professionals used one treatment approach and the paraprofessionals were required to use a different set of procedures. As Nietzel and Fisher (1981) noted, the comparison between professional and paraprofessional outcomes is problematic when there is this explicit confounding of therapist status and type of treatment. To assess the possible influence of such confounding, we conducted a subanalysis in which we excluded 7 studies in which the treatment of the professional differed system-

atically from that of the paraprofessional. We found that the effect sizes in the other 25 studies ( $M = 0.01, SD = 0.29$ ) closely parallel our overall findings: As before, professionals and paraprofessionals appear equal in effectiveness.

Many of the reviewed studies had other characteristics that might obscure the benefits of professional training (see Hattie et al., 1984; Nietzel & Fisher, 1981). For example, in some studies the professionals were students who had not yet completed their training program. In other cases, the paraprofessionals had extensive preparation or prior experience with the therapy task, or they received frequent supervision from a professional. Our analyses suggested, however, that these variables cannot account for the lack of difference between professionals and paraprofessionals. When we examined only those studies in which the professionals had completed their training ( $n = 24$ ), we found the mean effect size to be close to zero ( $M = -0.03, SD = 0.33$ ). When we excluded studies in which the paraprofessionals had either extensive preparation or prior experience with the therapy task, the effect size from the remaining 20 studies was also negligible ( $M = 0.02, SD = 0.33$ ). Similarly, the results were unchanged when we excluded studies in which the paraprofessionals appeared to have received close supervision from a professional; the mean effect size from the remaining 21 studies was again near zero ( $M = 0.01, SD = 0.32$ ).

## Discussion

Unlike the recent Hattie et al. (1984) review, we found no evidence that paraprofessional

Table 4  
*Differences Between Professionals and Paraprofessionals for Studies With Younger and Older Patients*

M age of patient (years)	N of studies	Effect size <sup>a</sup>	
		M	SD
Under 21	11	-0.16	0.29
21 or older	17	0.11	0.28

<sup>a</sup> Positive effect sizes indicate that professionals were more effective; negative effect sizes indicate that paraprofessionals were more effective.

therapists are more effective than professionals. Our analyses reveal that trained and untrained therapists achieve comparable levels of improvement. Moreover, this similarity between professionals and paraprofessionals occurs even when results are analyzed separately for different types of problems, treatments, and outcome measures.

The difference between our findings and those of Hattie et al. (1984) are striking, and we suspect that at least two factors are responsible for the discrepancy. First, Hattie et al. included in their review a number of highly problematic studies. In some of these studies the individuals they identified as professional had no formal psychological training, and in others the distinction between professional and paraprofessional appeared arbitrary. Further, in some of their studies the treatment examined was not a form of psychotherapy.

To compound these difficulties, Hattie et al. (1984) conducted traditional tests of statistical significance even though their data consisted of nonindependent observations. As work by Glass et al. (1981) has suggested, the use of standard inferential tests on nonindependent data can vastly overestimate the statistical significance of a finding. This may explain why our more appropriate analyses failed to confirm most of the statistically significant differences reported in Hattie et al.'s review.

Our analyses did suggest that the relative effectiveness of trained and untrained therapists might vary depending on the length of a therapy. We found that when treatment was brief, professionally trained therapists achieved better outcomes. In contrast, when treatment was of longer duration the paraprofessionals appeared to be more effective. Such a pattern could indicate that formal training improves a therapist's efficiency because added efficiency would be most apparent when the amount of therapy is limited. However, this interpretation does not explain why paraprofessionals appeared to perform somewhat better in longer therapies. Furthermore, we should emphasize that the difference in results for long and short therapies was quite small.

A second moderating variable observed in our analyses was the age of the patient. Paraprofessionals were more effective with younger patients, whereas professionals were better when the patients were older. Once again,

though, this intriguing difference was small in magnitude. Moreover, we discovered that the paraprofessionals in these studies tended to be younger than the professionals. Therefore, the finding may simply reflect the fact that therapists are more effective when treating patients closer to their own age.

In the title of our article we asked whether training makes a therapist more effective. On the basis of current research evidence, we would have to concede that the answer is no. Studies comparing professionals and paraprofessionals have not found substantial differences in the effectiveness of these two groups of therapists. Of course, this conclusion is no better than the data on which it is based, and earlier reviewers (e.g., Nietzel & Fisher, 1981) have emphasized the weaknesses in individual studies assessing this issue. Until further research alters the situation, though, the superiority of the professionally trained therapist remains a claim not proved.

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## Appendix

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