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Dose-Effect vs. Good Enough Level: A Comparison of Treatment Length and Maintenance of Treatment Gains at Follow-Up Using the Outcome Questionnaire-45

John M. Suyama

Brigham Young University - Provo

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Dose-Effect vs. Good Enough Level: A Comparison of Treatment Length and
Maintenance of Treatment Gains at Follow-Up Using the
Outcome Questionnaire-45

John M. Suyama

A dissertation submitted to the faculty of
Brigham Young University
in partial fulfillment of the requirements for the degree of
Doctor of Philosophy

Lane Fischer, Chair
Mark E. Beecher
Rachel Elizabeth Crook
Aaron Paul Jackson
P. Scott Richards

Department of Counseling Psychology and Special Education

Brigham Young University

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ABSTRACT

Dose-Effect vs. Good Enough Level: A Comparison of Treatment Length and Maintenance of Treatment Gains at Follow-Up Using the Outcome Questionnaire-45

John M. Suyama

Department of Counseling Psychology and Special Education
Doctor of Philosophy

This study examines psychotherapy response in connection to treatment duration and maintenance of treatment gains. The dose-effect perspective (Howard et al. 1986) first proposed applying medical terminology to investigate a level of exposure to a dose of psychotherapy (in number of sessions) where individuals can expect to receive sufficient benefit (i.e., 48 – 58% of clients can be expected to sufficiently benefit from therapy by 8 sessions). The proponents of the Good Enough Level (Barkham et al. 2006) argued that mere exposure to therapy is not an effective measure for client benefit, but rather that client responses to therapy vary. They contend that instead of recommendations for attending a certain number of sessions (dose-effect) that individuals who attend psychotherapy will discontinue attending therapy when they have obtained sufficient benefit (good enough level). Archival data of university students who previously attended individual therapy were obtained and subjects were contacted via email to take a survey and follow up measure of general well being. Those individuals who completed the Outcome Questionnaire-45 were selected for the study and their treatment response was analyzed in connection to treatment duration measured in number of sessions attended. 288 met criteria for the current study, consisting of 197 women and 91 men ranging in age from 17 to 52 ($M= 21$). Conclusions obtained from this study indicate that treatment duration is not a factor in subjects having positive outcomes to psychotherapy. Additionally, there was not a significant difference among subjects who were able to maintain treatment gains and the number of session attended in treatment. These results offer support for the Good Enough Level model of treatment response suggesting that individuals respond to therapy differently and discontinue when they have received sufficient benefit. Implications for these findings are discussed along with limitations of the current study.

Keywords: dose-effect, good enough level, treatment response, maintenance of treatment gains, Outcome Questionnaire-45.

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Introduction

Much debate has occurred over the years regarding the effectiveness of psychotherapy (Eysenk, 1952; Eysenk, 1965; Bergin, 1971; Wampold, 2001). Eysenck (1952) is first credited for seriously questioning the practice of psychotherapy when he concluded from his research that an individual participating in psychotherapy demonstrated no more improvement than a person not involved in therapy for the same duration of time (i.e., spontaneous remission). This was the impetus for subsequent careful study of the effects of psychotherapy. Over the past five decades, much research has been carried out to examine the value of therapy (Smith, Glass, & Miller, 1980; Howard, Kopta, Krause, & Olinsky, 1986; Kopta, Howard, Lowry, & Beutler, 1994; Lambert, Hansen, & Finch, 2001) with increasingly sophisticated statistical/empirical analysis. Conclusive evidence has been obtained to support the claim that psychotherapy is effective (Lambert & Ogles, 2004). In fact Lambert and Archer (2007) state “the consistent finding across thousands of studies and hundreds of meta-analyses leaves no room for debate—psychotherapy is beneficial” (pg. 151).

Now other questions are being examined regarding the various factors that are responsible for the effectiveness of psychotherapy. An extension of the question of whether psychotherapy is effective is how much therapy is enough to meet the needs of it consumers. Recent research has focused on two ways of measuring this question. In what is now considered a seminal article in the field, Howard et al. (1986) proposed calculating the dose-effect of therapy to better understand the parameters in which persons participating in therapy can expect to experience significant improvement. The dose effect analogy is taken from the medical field to describe the administration of an active ingredient (in this case psychotherapy) and the necessary exposure to this ingredient to achieve optimal results. The authors included 15

studies, which measured the effects of therapy over treatment length spanning a 30 year period. Data from 2,431 clients in individual therapy were examined with variation in treatment settings and approaches. The authors concluded that there was a negative acceleration curve to therapy gains in which there was increased improvement found with subjects as number of sessions increased with diminished returns with subjects requiring a high number of sessions for improvement. Their results indicated that by the eighth session 50% would be “measurably improved” as a result of therapy and by 26 sessions of therapy 75% would be improved in comparison to how they were feeling when they started therapy.

A competing perspective in answering the question of how much therapy is necessary, are those who are proponents of the *good enough level* or GEL (Barkham et al., 2006; Stiles, Barkham, Connell, & Mellor-Clark, 2008; Baldwin, Berkeljon, Atkins, Olsen, & Nielsen, 2009). Proponents of this perspective argue that recipients of psychotherapy respond varying to dose or numbers of sessions received and propose that clients who feel that they have sufficiently benefited from therapy discontinue attending therapy sessions with or without informing their therapist. They suggest that the rate of improvement is not primarily due to treatment length but more a factor of treatment response, hence the good enough level. Likewise, the authors indicate that those who respond faster with fewer numbers of sessions would not be better served by being required to attend more sessions to reach some optimal level of exposure to treatment. The first investigations of the GEL model were carried out by Barkham et al., (2006) consisting of 1,868 individuals who were in therapy from 1 to 12 sessions. These individuals coordinated terminations with their therapist and progress was evaluated on the Clinical Outcomes in Routine Evaluation – Outcome Measure. The authors

conclude from their results that the percentage of clients who were able to achieve reliable and significant improvement was not increased by attending a greater number of sessions.

Another factor to consider in the evaluation of psychotherapy services is obtaining information regarding long-term gains or benefits received from participation in therapy. Is it certain that clients who have terminated therapy maintain the gains that they received in treatment? Follow up research is the most efficient and effective way to obtain the information needed to assess post treatment functioning. An additional research question considering the debate between the dose effect and GEL model of therapy response is, “does the length of treatment have any relation to whether a client maintains the gains achieved in therapy?”

The purpose of this study was to examine the treatment response of clients who participated in therapy at the counseling center at Brigham Young University. Clients’ treatment duration was evaluated in conjunction with having a positive response to therapy to explore if any relationship exists therein. The first research question investigated whether there was any difference observed for subjects who demonstrated a positive response to therapy and the duration of the treatment they received in number of sessions. The second research question studied whether there were any differences among subgroups of individuals who had a positive response to therapy in connection to number of psychotherapy sessions attended. The third inquiry considered the issue of the ability to maintain therapy gains. This was done by examining those who maintained gains made in therapy in comparison to those who did not and data was analyzed to evaluate if treatment duration was a factor in inclusion into either group. The fourth and final research question inspects whether there are any differences in the positive responder subgroups in terms of maintaining treatment gains in relations to number of sessions attended in treatment. The findings from this study will either offer support to the dose-effect

theory that suggests those who stay in therapy for an optimal number of sessions will obtain positive responses or those who terminated after a lesser number of sessions were still able to have a positive response to therapy—good enough level. An additional exploration of this study is examining whether the ability to maintain treatment gains is connected with treatment duration.

Literature Review

First, the foundation of the dose effect literature will be reviewed by examining in detail the Howard et al. (1986) article with its implications for psychotherapy. Next, the existing empirical literature will be reviewed regarding this model with an emphasis on the improvement of standards and measurement in determining clinically significant change in therapy. Lastly, the literature regarding the competing perspective of the Good Enough Level will be explored.

Original Dose-Effect Study and Implications

Howard et al. (1986) were the first researchers to apply the dose-effect relationship to psychotherapy. The authors took archival data from 15 prior studies spanning a time range of over 30 years, which included 2,431 patients who had been involved in individual outpatient therapy. The practitioners from these studies were primarily psychodynamic or interpersonal in therapeutic orientation. The outcome results were measured by therapist ratings at the conclusion of therapy, patient ratings of general well being at various points in therapy, and by evaluation of patient progress by researchers from patient case files after termination. Analysis of the data examined the variables of the session number at which the patients were assessed to have improved, the number of patients at these fixed intervals, and the number of patients who were deemed to be improved at each of these intervals. The results from this analysis revealed the following estimates; 10 to 18 percent of patients could be expected to show improvement prior to attending the first session of therapy, 48 to 58 percent of patients could be expected to show measurable improvement by the eighth session, an estimated 75 percent of patients to be improved after 26 sessions, and 85 percent of patients to be improved from participation of therapy after 1 year of weekly therapy or 52 sessions.

In addition to the above analysis, Howard, Orlinsky, & Lueger (1989) examined 2 studies involved in their meta-analysis for potential differences due to diagnostic categories. The three selected categories were depression, anxiety, and borderline-psychotic. The outcome measures for improvement for these groups were determined by researcher ratings of patient files post treatment and patient self-ratings while in treatment. The results of this analysis indicated that those who were included in the depressed category responded to treatment earlier, followed by those with anxiety, and finally the borderline-psychotic group. The authors estimated that it took between 8 to 13 sessions for the depression and anxiety groups to improve above the 50 percent level, whereas it took the borderline-psychotic subjects 13 to 26 sessions to reach the same percentile for improvement.

Kopta (2003) was able to reflect on the groundbreaking nature of the original dose-effect study in which he was involved. Looking back on close to 20 years of research in the field of psychology after the Howard et al. (1986) study, the author states that prior to the dose-effect study most clinical research was dealing with the question of whether psychology was beneficial or not. As a result, the nature of the research undertaken at the time was focused on strictly controlled studies, which were fighting to validate a particular type of therapy matched to specific client needs instead of the overall effects of therapy. By taking a broader meta-analytic perspective, the question of psychotherapy as a whole, benefiting the average client, was a major paradigm shift in the field.

According to Kopta (2003), another significant contribution from the original dose-effect study resulted from the borrowing of terminology and standard of comparison from the medical field. The dose-effect itself is clearly identifiable as a reference adopted from the medical field, which connected language used in an established field to psychotherapy and operationalized the

dose of therapy to be a one-session unit of measure. Additionally, the authors utilized the comparison standard used in most pharmacological trials of 50 percent improvement in a treatment group as a condition sufficient to determine effectiveness in research. This standard continues to be utilized in psychotherapy outcome research by referring to the phrase 50 percent of clients in a particular group improved by x number of sessions. This last step paved the way for future studies not only to examine the dose-effect of psychotherapy, but also the dose-outcome (Howard, Orlinsky, & Lueger, 1994). Kopta (2003) states, "Mental health status for a specific patient could now be monitored across time using valid, reliable measures similar to monitoring blood chemistry in medicine" (pg. 730).

Lakin (1988) acknowledged the significant implications of the Howard et al. (1986) study but urged caution with the findings calling the results tentative. Lakin was quick to point out the shortcomings of the dose-effect study as including predominantly psychodynamic orientations, which assumes a longer course of treatment. Other concerns addressed by the author included methodological issues of varying criterion to judge treatment effect (therapist, researcher, and patient ratings) and the usual difficulties inherent in psychological research consisting of lack of a controls to account for the possible confounds of age, gender, patient selection, and dropout effects.

Surprisingly, little research regarding the dose-effect relationship in psychotherapy surfaced in the following decade. Speculation was raised that amidst the height of the managed care zeitgeist that psychotherapy extending for long periods of time was viewed to be a thing of the past. During this time, Howard et al. (1989) published an article examining the patterns of psychotherapy use in a clinic setting. Of 405 clients who were selected for individual therapy, it was discovered that a vast majority of clients (68 percent) visited the clinic for 26 or fewer

sessions, but only accounted for 23 percent of the sessions used by all patients and the resulting minority of clients (32%) accounting for 77 percent of total sessions causing the authors to conclude that “a relatively small portion of the patients used the bulk of the resources” (pg. 776).

During this time, McNeilly and Howard (1991) reevaluated Eysenk’s (1952) original data used to conclude that psychotherapy was no better than spontaneous remission. Using probit analysis, they concluded that psychotherapy was indeed effective and determined that the improvements described in the article that the non-treated group took 2 years to obtain was achieved by the psychotherapy group in only 15 sessions. Additionally, Orlinsky, Grawe, & Parks (1994) in an exhaustive study of process outcome research, investigated 114 studies in relation to treatment length and positive outcome. They conclude that out of these 114 studies, 110 found a positive correlation between the treatment length and benefit from therapy.

Dose-effect perspective with improved methodology. In 1994, Kopta, Howard, Lowry & Beutler published an article that extended the original study of the dose-effect of psychotherapy. A major deficiency of the Howard et al. (1986) article was the lack of consistency in the outcome measure to determine improvement. In the interim of time between these articles, the issue of clinical significance (Jacobson, Follette, & Revenstorf 1984; Jacobson & Truax 1991) was gaining more support as a new and improved method for determining the effectiveness of psychological treatment. The authors improved upon previous dose-effect research by applying the definition of clinically significant change to measure response to psychotherapy. The first criterion for achieving clinically significant change is having a measurement instrument which consists of a normal distribution of dysfunctional scores and functional scores: with resulting movement of scores proceeding from the dysfunctional

distribution into the functional realm. Secondly, any difference on an assessment measure needs to exceed the measurement error of the instrument.

The authors elected to use the Symptom Check List 90-R (SCL-90-R) and its related abbreviated forms as the measurement instrument and chose to measure significant change of various symptoms on the SCL-90-R. Items on the SCL 90-R are composed of 90 symptom traits from a variety of mental health disorders and rated on a scale of 0 (not at all) to 4 (extremely). Data collection occurred at 5 different health service centers in the Midwest and one Western state and service providers were psychologists, psychiatrists, and social workers with predominantly psychodynamic theoretical orientation. 685 adult patients were included in the study that was as a majority diagnosed with either Anxiety or Depression. Data collection from the different sites was conducted at varying intervals. Out of the 90 symptoms included in the measurement instrument, 64 were selected as being sufficiently reliable (having 100 or more people endorse the symptom at a moderate or higher level) to be included into the study. The authors then clustered these symptoms according to empirical grouping into the three categories of acute distress, chronic distress, and characterological symptoms based on response rates.

The resulting data analysis was calculated with regard to clinically significant reduction in these three main symptom areas through exposure to varying doses of therapy. The acute distress symptoms responded fastest to therapy with an expected 50 percent of this population experiencing significant improvement by the fifth session. The symptoms associated with the acute distress condition were primarily associated with anxiety, depression, somatization and obsessive-compulsive symptoms. The chronic distress cluster followed next in responsiveness to treatment with a mean 50% response to therapy at session 14 and consisted of symptoms from anxiety, mood disturbance, cognitive difficulty, and interpersonal difficulties. Lastly, the

characterological symptoms generally responded poorly to therapy, reaching clinical significance at 52 sessions or weekly therapy for the period of a year for an estimated 59% of the subjects. These symptoms included items from the hostility, paranoid ideation, and psychoticism subscales of the SCL-90-R. The overall conclusions made by the authors recommend that for there to be sufficient benefit for those who participate in therapy that 58 sessions are necessary for 75% of people experiencing the most common symptoms presenting in therapy (those comprising the acute and chronic distress symptoms). If a lesser standard of 50% improvement was deemed acceptable, an estimate of only 11 sessions of therapy would be necessary for these symptoms. These results suggest that greater session doses are required to meet the estimates calculated earlier by Howard et al. (1986), i.e., 26 sessions for 75% recovery. This result is most likely due to the comparison of variations of one measurement device for effect combined with applying the strict standard of clinical significance in determining positive results.

Although Kopta et al. (1994) was instrumental in the continuation of the dose-effect relationship in psychotherapy, several shortcomings need to be addressed. First, the methodology of using varying forms of the SCL-90-R was questionable in the potential exclusion of symptoms that were not exposed to all of the participants as well as reliability and validity considerations with alternate forms of any given measure. In conjunction with the first shortcoming, the SCL-90-R and abbreviated forms were administered varyingly depending on the data collection site. This necessitates the averaging of the symptom recovery trajectory along with assumptions regarding the linear abatement of psychological symptoms. The pattern of recovery from specific symptoms may not follow a consistent and gradual pattern or path. Finally, the grouping of the three categories had substantial overlap in terms of diagnostic criterion and although they were empirically grouped, it is likely in clinical practice that a client

can have symptoms in each of the categories allowing for generalization of treatment duration to be challenging at best.

Dose-effect, clinical significance, and Outcome Questionnaire-45. Kadera, Lambert, and Andrews (1996) also endeavored to further clarify the dose-effect relationship of therapy. The authors sought to improve the previous studies on dose-effect by standardizing the measure for improvement in therapy using a statistically rigorous instrument and measuring the effects of therapy for every session of therapy attended. The study included 64 adults presenting for treatment at a university based outpatient clinic. The therapists delivering services were graduate students in clinical psychology or clinical social work. The same criterion of clinical significance was utilized (Jacobson & Truax, 1991) to set a high standard for determining recovery in therapy. The Outcome Questionnaire 45 created by Lambert and Burlingame (1996) was used for the measurement of client distress (described in greater detail in the following section). For a client to achieve the status of recovery for the OQ-45, the pre-treatment score on the measure has to be 64 or greater (dysfunctional range) and improve by a total of 14 or more points to exceed the measurement error of the instrument, and have moved over from the dysfunctional distribution of scores into the functional range of scores. During the course of 10 months, data was collected for 97% of the 805 sessions followed with a result of 33% recovering, 25% improved, 37% experienced no change, and 5% deteriorated. Thus, about 58% of clients observed experienced positive and reliable change during the course of treatment.

The authors describe the discrepancy found in their results to Howard et al., (1986) as owing to methodological improvements of a reliable and statistically valid instrument as well as the rigorous requirements of the standard of meeting clinical significance. The number of sessions needed for the current study to reach 50% recovery was 16 sessions in comparison to 8

sessions in the original analysis. Kadera et al. clarify that recovery rates were only conducted for those clients with pre-treatment OQ-45 scores in the dysfunctional range (45 clients) which was a necessary condition for clinically significant change and stated that there was no such distinction for the original data set which most likely included individuals who were experiencing less severe symptomology. Furthermore, the OQ-45 is an inclusive outcome instrument that measures aspects of symptom distress, interpersonal functioning, and social role performance. This comprehensive measure is more sensitive to various symptoms of personal distress that possibly sets the bar for measured improvement at a higher level. Lastly, the authors' state by measuring client functioning at each session instead of pre/post measure, their data more accurately reflects the fluctuating nature of progress made in therapy and potentially captures a more realistic picture of improvements made throughout the treatment duration.

Another article using the dose-effect model of therapy was done by Anderson and Lambert (2001). This research served to replicate the findings from the Kadera et al. (1996) article by expand the findings through combining data gathered from this new study with the original data used by Kadera and colleagues, along with the additional use of survival analysis to analyze the dose or session numbers of therapy needed to reach clinical significance. Survival analysis operates under that dichotomous identification of an event of interest (occurrence or absence) happening over a period of time. Therefore, the criterion of interest for this study was reliable or clinically significant change observed during the course of therapy in session units. The study consists of 40 therapists offering services at a university outpatient clinic, using the OQ-45 for session-by-session measurement, and using the standards for clinically significant change in therapy used by Jacobson and Truax (1991). 75 subjects were included in the final research sample and their progresses was followed in therapy over a period

of 7 months with 53 individuals beginning therapy in the dysfunctional range and 22 starting below the cutoff score of 64. Survival analysis from this data set indicated that after 5 sessions of therapy 25% of participants can be expected to achieve clinical significance, by session 11 50% of clients are estimated to attain clinical significance. When these results are combined with the Kadera et al (1996) data set and analyzed in like manner, 25% were expected to reach clinical significance by the end of session 8, 50% following session 13, and 75% after session 25. The reliable change index was also calculated for the combined data set resulting in expectancies of 25% improvement by session 5, 50% reliable improvement by session 9, and 75% measured reliable improvement by session 17.

An additional facet that was studied by Anderson and Lambert (2001) was the obtaining of follow up data 6 months post treatment from participants of their study. An invitation to participate in a 6-month follow up measure was sent to each subject with return rate of 72%. 3 clients who continued to seek therapy elsewhere were excluded from this analysis. 11 subjects were able to achieve the status of reliable change post therapy, but 8 clients also were determined to have deteriorated from their last OQ measurement. Overall, it was concluded that gains obtained in therapy were most likely to be maintained at the 6-month follow up period.

These similar studies bring added improvements to the dose-effect relationship research in psychotherapy, but have several limitations in need of being addressed. The data obtained from the university outpatient clinic is confounded by therapeutic services being delivered by only novice therapists in training. The results of response to therapeutic interventions could be due to lack of clinical experience. Next, even with the combined samples obtained from both studies the participants were relatively few in number (dysfunctional group $n=102$ and functional group $n=38$) creating problems with generalizations of the findings. Finally, the

subject sampling consisting of 85% Caucasian individuals may not adequately represent responses of minority individuals to the therapeutic process.

Hansen and Lambert (2003) set out to build on the previous findings of dose-effect literature and address limitations of previous studies. The authors utilized archival data from 4 sources (employee assistance plan for a national business, health management organization operating on a national scale, health management organization locally operated, and a community mental health center in a northern state) consisting of a total of 4,761 patients. These subjects were given the OQ-45 before entering therapy and prior to each attended session of therapy. Identical measures to evaluate recovery, improvement, no change, and deterioration as a measure of clinical significance were utilized along with survival analysis of the data (Anderson & Lambert 2001). Results indicated that 13 to 18 sessions are necessary for 50% of individuals participating in therapy to be considered recovered following the necessary conditions for clinically significant change. These findings are consistent with the results of like studies (Kopta et al., 1994; Kadera et al., 1996; Anderson & Lambert 2001) that adhere to the stringent guidelines of clinically significant change proposed by Jacobson and Truax (1991). The authors also conclude that attending a greater number of sessions increased the probability of improvement in therapy.

Good Enough Level

An alternative perspective to the dose-effect relationship in psychotherapy is what is called the good enough level model of treatment response (Barkham et al., 2006). The authors in this study postulated that the dose-effect aggregate measure for determining optimal session length may be inappropriate since individuals presenting to therapy most likely respond differently to treatment. They also contended that the dose effect analogy posed problems with

the assumption that mere exposure to therapy without interaction with interventions would bring about linear change. The first research endeavor of the GEL consisted of 1,868 subjects presenting to counseling at various primary mental health clinics throughout the United Kingdom. These participants attended 1-12 sessions, had pre-determined endings for treatment, and were administered the Clinical Outcomes in Routine Evaluation – Outcome Measure (CORE-OM) at initiation and termination of therapy. The reliable change index and cutoff scores (Jacobson & Truax 1991) were calculated for the CORE-OM for the purpose of measuring clinical significance. Demographic data for participants included mean age of 40 years, 73% female, with the majority of individuals being described as anxious or depressed.

Results obtained from this study indicate that participants in their study did not follow a negative acceleration curve but had a higher probability of achieving reliable change at the lower session lengths (83% likelihood for those attending 2 sessions) in comparison to higher numbers of sessions attended (62% likelihood at session 12). The relatively constant slightly declining clinical significance rate for those participating in planned termination of therapy provides support for the GEL model in that those who respond significantly to therapy at lower session lengths and terminate have gotten what they wanted from therapy and are not in need of more sessions to reach an optimal amount of therapy. Another implication of these findings are that aggregated data for treatment response is prone to create a negative acceleration curve because it fails to recognize the elimination of early responders from the group measure and allow the slow responders that utilize greater amounts of sessions to wash out the gains of those who only needed a few session of therapy. Lastly, the GEL was compared to the analogy of pesticides being applied to insects on crops in terms of psychotherapy where “the easy to treat clients have responded by the 10th session so only the hard to treat or resistant remain” (pg. 165).

Stiles, Barkham, Connell, and Mellor-Clark (2008) sought to replicate the previous study, expanding the findings for the GEL. A larger sample of 9,703 subjects were included if they met the criteria of having filled out a pre and post-treatment CORE-OM measures, attended between 1-20 session, started therapy in the clinical range, and were described by their therapist as having a planned end to treatment. Clients were selected from community mental health centers within the UK using the CORE-OM as the measurement instrument with its associated determinants for the calculation of clinical significance. With this substantially larger data set, the authors concluded that 62% (6,019) of participants reached clinically significant change, 19.4% (1,879) showed reliable improvement, 17.6% (1,705) showed no change, and 1% (100) reliably deteriorated. A negative correlation of $r = -.75$ was found between clinically significant change and numbers of sessions attended. This finding further supports the original GEL study that goes against what would be expected in the dose-effect negative acceleration pattern. Both reliable improvement and mean pre-treatment to post-treatment differences on the CORE-OM were consistent regardless of session length. This is another significant finding for the GEL model with the authors concluding “insofar as the clients change at different rates, they achieve a satisfactory level of gains at different treatment durations, and they (working with their therapists) end treatment when this happens” (pg. 301).

Baldwin, Berkeljon, Atkins, Olsen, and Nielsen (2009) conducted another examination of archival data to compare treatment effects using the OQ-45 to determine session-by-session response to therapy considering both the dose-effect model and the GEL model. The cumulative data set consisted of 4,676 individuals who attended individual therapy for a mean of 6.46 sessions and were seen by 204 therapists at a university counseling center. The authors used both an aggregate model and stratified model to fit calculation of data for the dose-effect vs.

GEL comparisons. They found that there was a slight negative accelerating curve that was identifiable until the eighth session, but did not extend beyond that number of sessions. The authors conclude that the data more closely fit the GEL model when stratified since there was no linear relationship between probability of change and session length. They also contend that attending higher doses of therapy did not result in higher probability of reaching clinical significance and rate of change was not related to total length of treatment - indicating a variance in the response rate to number of sessions attended.

Methods

Procedure

Archival data were utilized for this study from previous clients of the Counseling and Psychological Services (CAPS) at Brigham Young University who received an invitation to participate in an online survey that was sent via email. The subjects were selected from all students who had received individual counseling during the academic year and consented to participate in research from the CAPS. The email detailed that any identifying information would be eliminated and that data gathered would be utilized for the improvement of services delivered by the CAPS. The invitations were sent out at the end of academic years 2007 and 2008. The response rates for the data collected were 7.9% for 2007 and 5.1% during 2008. Those who participated in the survey completed a satisfaction survey that was created by the CAPS along with the Outcome Questionnaire-45 (OQ-45). Pre-treatment OQ-45 scores will be compared to final session OQ-45 scores to determine response to psychotherapy and first session OQ-45 scores will be examined against follow up OQ-45 scores to identify maintenance of gains made in treatment. The average age for subjects in this study was 21 with a range from 17 to 52 ($SD = 4.8$). Subjects consisted of 197 women and 91 men, of whom 222 identified as being single, 65 married, and one as being divorced.

Measures

The OQ-45 is a 45 item self-report measure designed to have clients 18 – 80 years old give a rating regarding personal functioning in 3 main areas in their lives based on a 5 point Likert scale. The OQ-45 was designed to be readable to clients with a 6th grade literacy level and to create a baseline score for people entering counseling services. This instrument is intended to capture a broad range of psychological distress, as well as, gauging responses to significant life

events. The range of possible scores on the OQ-45 is 0 – 180, with higher scores indicating greater distress and symptomology. The format of this assessment consists of statements that are given in declarative form to which the client responds by rating how accurately the statement reflects the client's feelings for the past week. For example one item states, "I have thoughts of ending my life," with possible responses of 1 = never, 2 = rarely, 3 = sometimes, 4 = frequently, and 5 = almost always. Of the 45 items, the majority of the questions are scored with the numerical data assigned to the items, but several items of the OQ are reversed scored to correct for random responding (i.e., "I enjoy my spare time").

The OQ-45 was primarily developed to create a valid measure of psychotherapy outcome in routine practice and to monitor the efficacy of treatments. The psychometric properties of the OQ-45 are as follows, the internal consistency value of .93, test retest reliability for a three week period is .84, and concurrent validity has been established from comparisons to several mainstream outcome measures (Lambert et al., 2004, Baldwin et al., 2009). For the measure to be clinically useful, the developers created the criterion that the instrument should be easy to administer and score, be sensitive to client's symptom changes in short timed intervals, have low cost for administration, and be able to capture a variety of characteristics associated with mental health functioning. The OQ-45 is primarily designed to be used routinely in clinical settings to be able to assess how the client is functioning before psychotherapy, during treatment, and at termination.

The three major content areas of concern for the OQ-45 are the subscales of Symptom Distress, Interpersonal Relations, and Social Role Performance. The Symptom Distress area contains 25 items that were selected based on two extensive studies done by the National Institute of Mental Health in 1988 and a 1992 study performed by Human Affairs International.

These studies identified the most prevalent types of mental disorders occurring in the United States as well as the most frequently diagnosed DSM-III-R diagnostic codes in a nationwide service area. Since the most common intrapsychic symptoms were depression and anxiety based, the test developers relied heavily on these symptoms for the Symptom Distress subscale. Also included among this subscale are two items that screen for substance abuse. The Interpersonal Relations subscale consists of 11 items measuring the reported satisfaction of the client's personal relationships. This measure was created in accordance with data from quality of life studies indicating personal relationships being significant to a high level of life satisfaction and personal distress being influenced by relational problems due to psychopathology or other reasons. Lastly, the Social Role Performance subscale consists of 9 items that are designed to measure how the client's current distress is influencing their ability to perform in family roles, work/school, and leisure activities. The importance of functioning in these roles was supported in quality of life research along with the data that satisfaction in these important roles is highly correlated with assessments of general life satisfaction.

In *Administration and scoring manual for the OQ-45.2* (Lambert et al., 2004), the authors report that normative data for the OQ-45 was collected for both the clinical and non-clinical populations. Clinical samples were obtained from the settings of university counseling center, outpatient clinic, an employee assistance program, and an inpatient setting from several states. Norms from the non-clinical samples were acquired from undergraduate university students from three separate states and a community sample was compiled from various local and national businesses combined with randomly selected individuals from an area telephone book. Each individual who participated in the study did so with full consent. The clinical and non-clinical population OQ-45 scores were analyzed and there was a significant difference between the

results of these two groups. It was determined that the cutoff score between the clinical and non-clinical populations was 64. That is if a client scores a 64 or above on the OQ-45, then that person is considered to be in the clinical/dysfunctional population and those who score below 64 are considered to be in the non-clinical/functional population.

Data Analysis

The calculation methods necessary to obtain the above cutoff score were proposed by Jacobson and Truax (1991) in a landmark article for determining clinically significant change in psychotherapy outcome research. The authors describe historical challenges inherent in measuring change that is both statistically significant and clinically meaningful, while providing what is now the most utilized method of outcome measurement in psychotherapy (Lambert et al., 2004). Jacobson and Truax suggest the first step in determining clinically significant change (CS) is the creation a cutoff score for any measurement instrument of which three alternatives were proposed. The best method for the OQ-45 was the creation of a weighted midpoint between the averages of the functional and dysfunctional population, which best fits measures for which data is overlapping between the two populations.

The next step in determining CS was establishing a reliable change (RC) index that ensures that the change measured is greater than the measurement error of the instrument. For the purposes of the OQ-45, this was calculated to be a 14-point difference (+or -) from the pre-treatment score to the final session score. Therefore for a client to achieve CS, the individual's pre-treatment OQ-45 score must first originate in the clinical/dysfunctional range, have improved by 14 or more points on the OQ-45 (RC), and have moved from the clinical/dysfunctional range to the non-clinical/functional range.

Many have stated that the requirements necessary to meet CS are quite rigorous (Anderson & Lambert, 2001; Kadera et al., 1996; Kopta et al., 1994). Even if a client doesn't meet the criterion for CS, they can still be considered to have reliably improved if they attain the RC index. This is a helpful measure of improvement for individuals who cannot reach the mark of CS because they started therapy in the clinical/dysfunctional range and achieved RC, but did not cross the threshold into the non-clinical/functional range or for those people who do not start therapy in the clinical/dysfunctional range but have a decrease of 14 or more points on the OQ-45.

The purpose of the current study is to examine the response to therapy in relation to treatment duration and maintenance of gains made in therapy at follow up. In particular, to investigate whether there is any difference between those who were able to maintain treatment gains to those who were not in relation to length of treatment (does total treatment length have any relation to the maintenance of gains made in therapy). Data utilized in this study was from individuals who only participated in individual therapy and sufficiently completed an OQ-45 at follow up. Treatment responses were examined by comparing the pre-treatment OQ-45 score to final session OQ-45 measure to determine if they either achieved CS or RC status at the termination of therapy. The subject's first session OQ-45 scores were then compared to their follow up OQ-45 scores to assess for maintenance of treatment gains.

The subjects were considered to have maintained their treatment gains if their follow up OQ-45 scores meet the standard of either CS or RC in comparison to their pre-treatment OQ-45 score. The individuals were then categorized into the possible groups of maintained treatment gains or did not maintain gains at follow up. These groups were analyzed as a function of total duration of treatment and examined if session length or dose of treatment has any implications

on the ability to maintain treatment gains. This final question potentially addresses whether length of treatment for those who responded to treatment with CS or RC at the end of therapy has any bearing on the ability to maintain treatment gains or not.

The statistical methods that were used to analyze the data for this study consisted of a combination of independent *t*-tests and One-way Analysis of Variance (ANOVA). The independent *t*-test was used to compare means of two groups that are not from the same population sample. For this study, the first groups that were compared were those who had a positive response to therapy vs. those who did not meet criteria for inclusion into either the CS group or RC groups. These two groups were analyzed in relation to treatment duration to examine if there were any statistically significant differences between response to therapy (positive or non positive) and number of sessions attended in treatment. Another independent *t*-test was conducted as those who were identified as having maintained treatment gains were compared to those who were not able to maintain therapy gains. This analysis examined if there were any significant differences in ability to maintain treatment gains in relation to treatment duration.

The ANOVA procedures are beneficial in analysis of groups with 3 or more mean comparisons. The rationale for using the ANOVA test was to examine if there were any significant differences between the groups being investigated and to reduce the occurrence of Type I error in conducting multiple *t*-test comparisons (Howell, 2002). For the present analysis, those who had a positive response to therapy were separated into three different subgroups of clinically significant change or CS, reliable change in the clinical population or RC clinical, and reliable change in the non-clinical population or RC non-clinical. These subgroups were compared in relation to number of sessions of psychotherapy attended to examine if significant

differences in the means of these positive responder subgroups and treatment duration.

Additional ANOVA testing was conducted when positive responder subgroups were analyzed in relation to maintenance of treatment gains. This investigation examined if there were any significant differences in the positive responder subgroups' ability to maintain treatment gains in relation to duration of treatment compared to individuals who did not maintain gains.

Results

Out of the 478 subjects who participated in the survey, 288 people met criteria for the current study while 190 were excluded for one of the following reasons: this was not the client's first recorded episode of therapy as defined as a continuous period of therapy without a span of 90 days or more in between sessions, the subject participated more than once in the study, or the student did not complete the follow up OQ-45 sufficiently to obtain a valid score. Initial analysis examined the data from a group perspective considering information of all subjects going through psychotherapy and obtaining data at follow up.

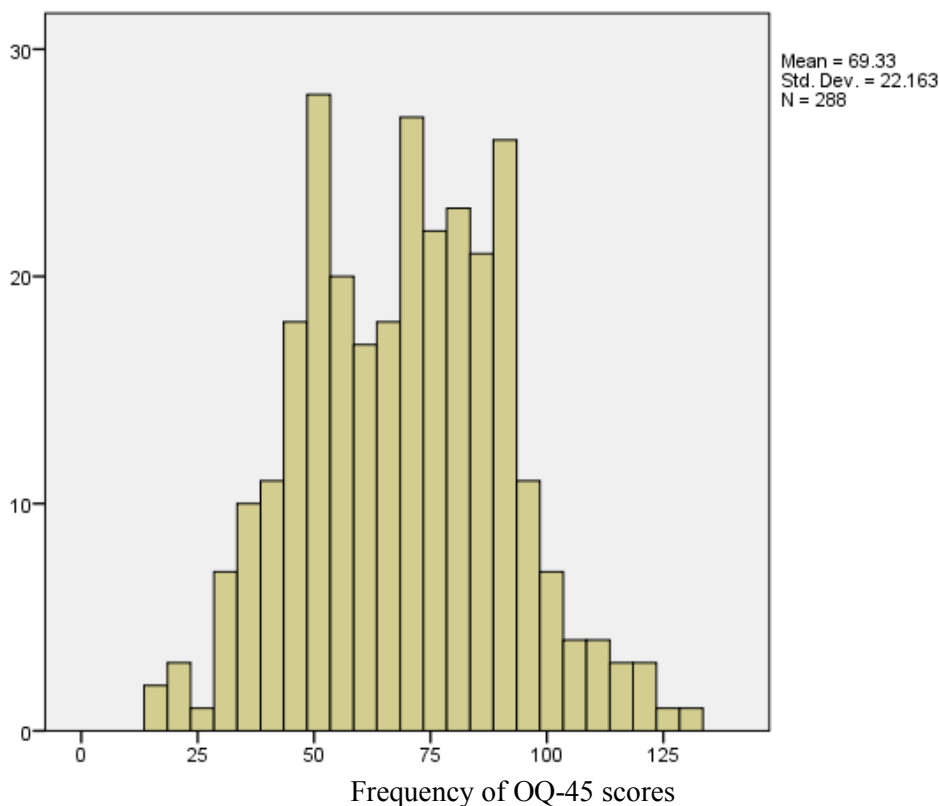
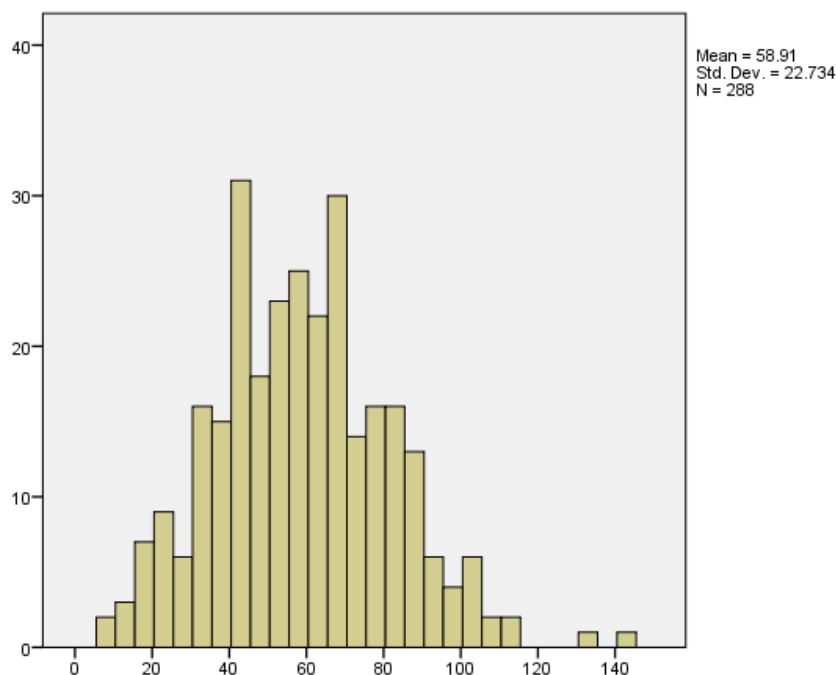


Figure 1. OQ-45 totals for first sessions of subjects.

Of those who met criteria for the study, the mean initial session OQ-45 score was a 69 with a standard deviation of 22. The range of OQ-45 initial scores had a maximum value of 131 and a minimum of 16. Taking a closer look at this data in quartile ranges, 25% of initial OQ-45

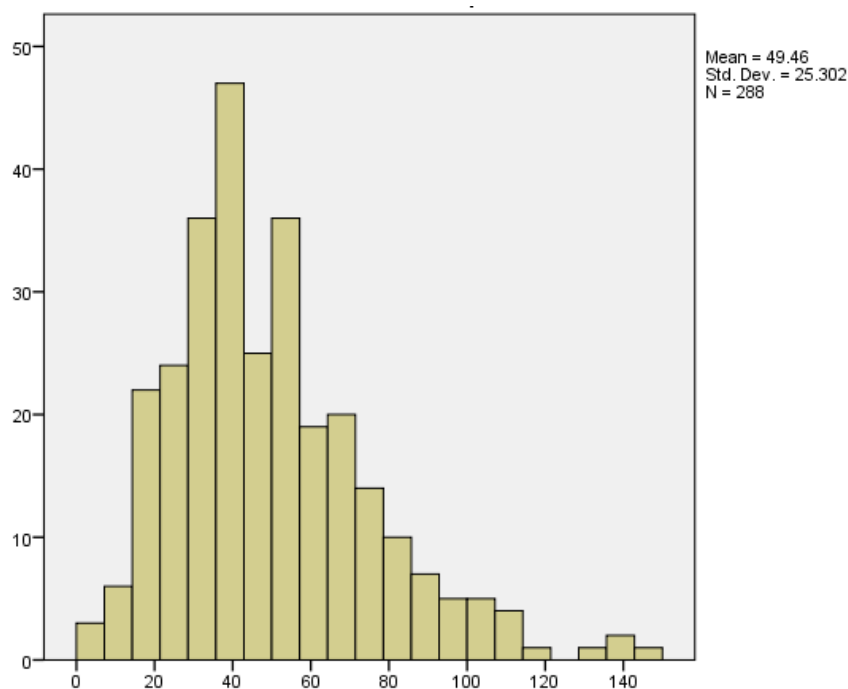
scores were 52 or lower, 50% of this group scored 69 or below, 75% of subjects had a score of up to 85, and the remaining 25% of people had a score of 86 or above.



Frequency of OQ-45 scores
Figure 2. OQ-45 totals for the last session.

The average OQ-45 scores for the final session of treatment was 58.91, with a median of 59, a modal score of 70, and standard deviation of 23 units. The range of OQ scores for final session consisted of a maximum of 144 and a minimum of 8. Closer examination of this data reveals that 25% of participant's final session OQ-45 scores were at a 42 or below. Half of the subject's final session scores were at a 58 or lower. Lastly, 75% of scores at final session were at a level of 74 or below, with the remaining subjects having a score of at least 75.

Finally, the follow up OQ-45 scores obtained from the subjects had a mean of 49, mode of 39.5, and median of 44. These scores ranged from a maximum of 147 to a minimum of 5 with a standard deviation of 25 units. At follow up, 26.4% of subjects reported a score of up to 33 on the OQ-45, 50% of participants measured a score of at least 44, 75% reported a score of 63 or below, with the final 25 % with a score of 64 or greater.



Frequency of OQ-45 scores
Figure 3. OQ-45 totals at follow up.

The duration of treatment for subjects ranged from a minimum of 1 session to a maximum of 167 with a standard deviation of 14. The mean number of sessions for a treatment episode was 8 with a median of 4 and a mode of 2. There was definitely a positive skew to this data with 32.3 percent of participants having 2 sessions or less and over half of the subjects (54.2 %) attending 4 or fewer sessions. It was observed that 80 percent of subjects attended 10 or fewer sessions and 90 percent attended 20 sessions or less.

The average time between the last session of treatment and the completion of the follow up OQ-45 measure was 5 months with a minimum time of 2 weeks and a maximum time of 51 months. This data set also had a significant positive skew (5.70 skewness) with a standard deviation of 4.35. 31.6% of subjects had participated in the follow up OQ-45 score within 3 months of their final session. 60% of participants had completed their follow up measure within

5 months of termination of treatment with 95.1% of clients completing the OQ-45 at follow up by a 9 month period after receiving psychotherapy services.

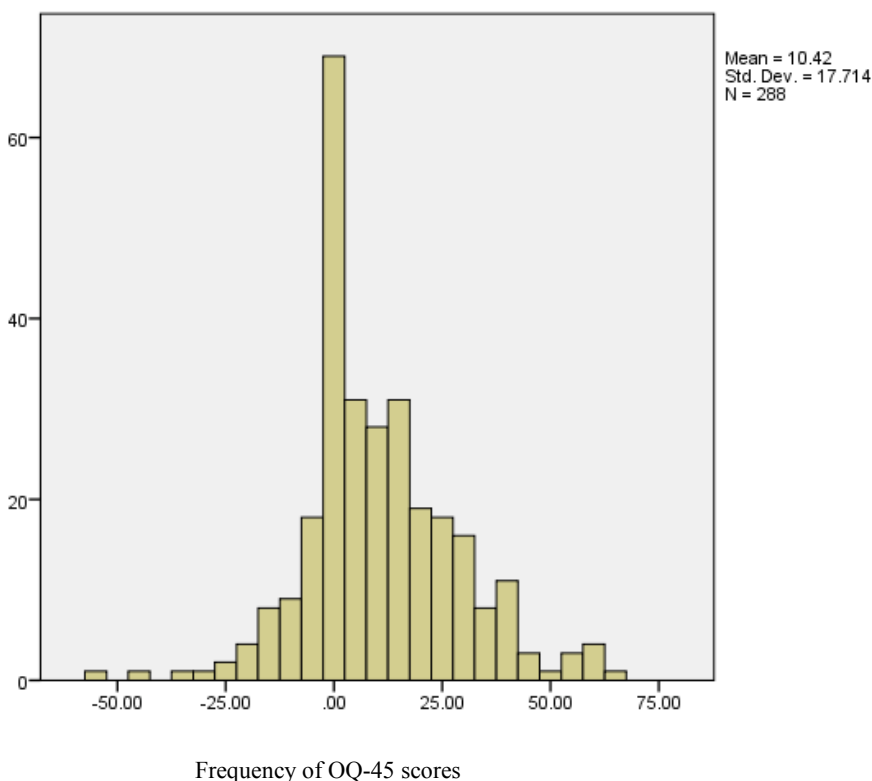


Figure 4. Totals for the differences between first session to last session OQ-45 scores.

As a whole, the participants showed an average improvement of 10 OQ-45 units from the first session to last session with a standard deviation of 18 units, which ranged from a reduction of 63 units or gain of 55 units. There was another 9 unit reduction at the group level from the final session OQ-45 measure to the score obtained at follow up consisting of a standard deviation of 20 and a range of scores from a reduction of 95 units or a gain of 51. This indicates a positive response to therapy overall, with implications that the group was able to maintain and even improve upon the gains that were made while receiving psychotherapy. The average OQ-45 score obtained at the first session of treatment was a 69, which is considered a score in the clinical sample range. The reduction of 10 units at final session of treatment does not qualify as being in either the reliably changed or clinically significant change categories. Although the

mean score obtained at follow up of an additional 9 units meets criterion of clinically significant change as a group (more than 14 units reduction in OQ-45 scores to control for measurement error of the OQ-45 and movement from the clinical sample score range to the community sample level of distress).

The next analysis shifted focus from the whole group's response to psychotherapy to individual subjects' responses. In examining the research questions of impact of treatment length on a client's ability to maintain treatment gains, subjects who had a positive response to psychotherapy were identified and analyzed. Positive responders were determined to be subjects who were able to achieve clinically significant change or reliable change. 49 individuals met criterion for inclusion into the CS group as a result of having an initial OQ-45 score starting in the clinical range, experiencing a reduction in OQ-45 units from the clinical range into the non-clinical range, and for the change to exceed the measurement error of the instrument (14 units for the OQ-45). Of the 288 people who were included in the study, 17% of participants were included into the CS group. This small percentage supports the observation that the criteria for clinically significant change are very stringent (Jacobson & Truax, 1991; Kopta et al., 1994; Kadera et al., 1996; Anderson & Lambert, 2001).

The next group of positive responders consisted of subjects who obtained reliable change status. The reliable change group contains 2 subgroups. The first involves individuals whose original OQ-45 score was in the clinical range and decreased 14 units, but did not drop below the clinical sample score of 64 (RC clinical). The second subgroup consists of subjects whose first session OQ-45 score was below the clinical sample score of 64, but reduced 14 units or more, demonstrating a positive response to psychotherapy exceeding the measurement error of the OQ-45 (RC non-clinical). Among the first subgroup there were 29 subjects who were considered to

be in the RC clinical group as compared to the RC non-clinical group, which had 26 subjects. The RC group as a whole had 55 individuals who consisted of 19% of participants with 10% in the clinical RC group and 9% in the non-clinical RC group.

In answering the first research question, data was compared to examine if treatment duration had any impact for inclusion into the positive responder group versus those who did not demonstrate a positive response to therapy at final session of treatment. A *t*-test for group comparison was conducted and the results indicate that there are no significant differences between those who had a positive response to therapy and those who did not in terms of session length ($t(286) = -.972, p > .05, NS$). In considering the second research question, data was analyzed at the positive responder level to study if there was significant variance between the subgroups of positive responders in regards to session length. A one-way Analysis of Variance (ANOVA) was conducted to examine any significant differences between subgroups of positive responders in relation to session length. There were no statistical differences found among the positive responder subgroups in relation to number of sessions attended ($F(2,101) = .985, p = .377, NS$).

Another element of the current research question was regarding the ability to maintain gains made during treatment. It is one thing to make progress during treatment, but another thing altogether to be able to maintain the progress made previously. Data were analyzed to examine whether there is a difference between individuals who have a positive response to therapy and their ability to maintain gains. It was determined to only include the positive responders to treatment in examining maintenance of gains as individuals had to first demonstrate a positive response to therapy in order to maintain those gains. Those who were determined to have

maintained treatment gains were identified as having sustained at least a 14-unit reduction from their pre-treatment OQ-45 scores in comparison to scores obtained at follow-up.

The third research question of this study examined the relationship of maintaining treatment gains in relation to treatment duration. Of the 104 subjects who were considered to be positive responders to treatment, 87 individuals (84%) met the criteria for having maintained treatment gains. 17 individuals (16%) had follow-up OQ-45 scores that were less than 14 units from their original score obtained at first session or obtained a higher score than their first session score. The data was further analyzed with an independent samples *t*-test which indicated that there was no significant difference between individuals who were identified as “maintainers” of treatment gains and their duration of treatment as measured in number of sessions attended ($t(102) = -.181, p > .05, NS$). The final research question explored whether there were any differences among positive responder subgroups in ability to maintain gains in relation to treatment duration. This analysis was conducted using Analysis of Variance among Positive Responder sub-groups considering whether they were able to maintain gains from therapy in connection with number of sessions attended in treatment. The sample sizes in some sub groups are very small which makes this analysis somewhat unreliable. Nevertheless, there was no significant difference among the groups in terms of the number of sessions attended ($F(5, 98) = 1.28, p = .279, NS$).

Discussion

The results of this study offer support for the Good Enough Level theory that proposes that there is no optimal level of sessions for clients to attend to receive the most benefit for psychotherapy. In this study, positive responders were able to achieve their benefit from psychotherapy regardless of treatment duration. Additionally, the analysis appears to support the hypothesis of the GEL, giving validation to the assumption that clients who enter therapy choose when they have achieved a good enough level of improvement and discontinue psychotherapy. The additional potential implication regarding the current study is that the GEL hypothesis is further supported by the subject's ability to achieve positive responder status as determined by data from the OQ-45. This suggests that client's who have a positive response to therapy don't arbitrarily stop attending psychotherapy sessions, but have some sense about the improvements that they are making through treatment. Furthermore, there were no differences detected within the positive responder subgroups (CS, clinical RC, and non-clinical RC) in relation to number of sessions of treatment. This provides added support to the notion that even among the positive responder subgroups, there were no differences observed in relation to treatment duration and inclusion into any specific positive responder subgroup.

The other aspect of the currently study examined the ability of participants in psychotherapy to maintain the gains they made while they were in treatment. The data indicate that length of treatment was not related to ability to maintain therapy gains. This question relates to the dose effect theory of session length being connected to response to therapy. As there was no relationship between session length and ability to maintain treatment gains, it appears that this further supports the proposition that there is not relationship between an optimal duration of psychotherapy in regards to ability to maintain treatment gains.

An additional thought-provoking observation from the data was that there were no significant differences observed between the positive responder subgroups in terms of maintenance of treatment gains. Data obtained from the analysis report that out of 49 subjects in the CS group, 41 were considered to have maintained gains (84%). In the RC clinical group, 26 out of the 29 subjects maintained gains (90%) and in the non-clinical RC group 20 out of 26 individuals were able to maintain treatment gains (77%). There is a general tendency of clinicians and researchers to value the progress of clients who achieve clinically significant change to be more substantial or meaningful than any other measured improvement in psychotherapy. These results indicate that no one subgroup is superior to another in ability to maintain treatment gains.

Another interesting facet of this analysis is examining the results of the non-clinical RC group. This subgroup of subjects started their initial session of treatment below what is considered the clinical range of scores for individuals. These clients are viewed as being less severe in presenting concerns (by self-report) and the assumption is that the gains they make are less significant or meaningful than those of their counterparts (CS or RC clinical). Although the non-clinical RC group had the lowest percentage of maintainers (77%) among the three subgroups, the fact that they were able to maintain gains at a high percentage suggests that the gains they made are meaningful and enduring. Thus, the ability to maintain gains made in psychotherapy appears to be connected more to having a positive response to treatment than duration of treatment.

The data from this study differed from previous research (Hansen, Lambert, & Forman, 2002; Seligman, 1995) examining response rates and patterns of psychotherapy. The results of this study had a lower rate of positive responders (36.1%) in comparison to literature reporting

rates of positive responders being upwards to 87% (Lipsey & Wilson, 1993; Shapiro & Shapiro, 1982; Smith, Miller, & Glass, 1980). One reason for the discrepancy found in this study may be connected to the number of subjects who only attended one session of therapy (N = 44, 15.3%). For individuals to be considered to have a positive response to therapy, there had to be at least two OQ-45 scores to determine a response to therapy. The addition of the subjects who only attended one session could offer further information regarding the difference in response rate to psychotherapy as a whole.

Another possible explanation for the divergence in the response rate results from previous literature may come from examining the overall group response of participants in this study. The average first session OQ-45 score for the group was 69.3. The mean group final session OQ-45 score was 58.9, making a reduction of 9.4 units. If this were viewed from the perspective of response to psychotherapy, it would be determined that the group as a whole did not have a positive response to treatment because the reduction in scores is less than the measurement error of the OQ-45. However, this perspective would change noticeably if considering the additional data obtained at follow up. The mean follow up OQ-45 score for the group was 49.5. This is an additional 9.4 unit reduction from the final session score constituting a cumulative reduction of 18.8 OQ-45 units from the first session measurement. When considering treatment response to be change from first session OQ-45 score to follow up score, subjects as a whole would be considered to have achieved clinically significant change. In contrast, if treatment response is determined by comparing change from first session OQ-45 scores to final session scores, the group would have classified as having no response to treatment. A similar event may happen with individual results that under classify subjects as having no response to therapy, but they may continue to improve after treatment as calculated by follow up measures.

Further research in connection to the current study can be examined in the area of maintenance of gains from psychotherapy treatment. Little is known regarding what factors contribute to increase the likelihood that clients will maintain gains obtained through psychotherapy. Most research articles examine the effectiveness of a certain type or modality of treatment in comparison to another, but possible variables that account for ability to maintain gains may be an area of future exploration. Results from this study suggest that having a positive response to therapy may be related to the ability to maintain treatment gains, but there was no comparison group to test this hypothesis in the current analysis. A potential avenue for future pursuit can be qualitative analysis research investigating what former clients of therapy report as enabling them to maintain the gains they obtained through participation in psychotherapy.

Another area of future research can also be connected to an unexpected result obtained through this study. The information obtained by following the group response to psychotherapy was interesting in several ways. It first demonstrated an initial reduction in OQ-45 score that was not determined to be a positive response, but in conjunction with data obtained at follow up, the group as a whole was considered to have achieved clinically significant change. This unanticipated finding raises the question of whether clients continue to make improvements after they have terminated treatment. There is a tendency to believe that the full treatment effect of psychotherapy is measured by comparing a pre-treatment measure to a final session measure. This may be a premature perspective in analyzing the full treatment response of psychotherapy. Examining treatment response for clients at various intervals including last session and specified timeframes after termination may provide additional insights into treatment effects in their entirety.

Practical implications related to the results from this study may include how psychotherapists view clients' discontinuation of therapy. Oftentimes clients discontinue therapy without discussing termination with their therapist. When this happens, the therapist may view this with a pessimistic assumption that the client prematurely terminated treatment. The result from this study suggest that having a positive response to treatment has no observable relationship with treatment duration and that clients may have a good feel for when they have obtained sufficient progress in therapy (supporting the GEL hypothesis).

There are several limitations of the current study that need to be addressed. First, the research was conducted on archival data from university counseling center clients, which may have several implications. Students are often operating under the influence of an academic calendar, which may externally influence the entering and leaving of therapy as determined by circumstance more than by need or readiness. Another consideration for dealing with a university population is the limitation in the age of subjects and level of functioning of the clients. Dealing with a narrow age range of subjects may not be representative of how other populations may respond to treatment. This can also be said for the level of functioning for the university population where presenting concerns may be less severe and their ability to respond to psychotherapy interventions may be greater. Another discovered limitation was the variable timeframes in which follow up data was collected. A set time was decided for sending out requests for this data and the information gathered would have been more consistent had all clients been followed for a fixed amount of time after their last session of therapy and follow up data was requested (i.e., 6 months post-treatment).

Additional research can be conducted to examine if the findings from the current study would differ from exploring the treatment outcome and maintenance of individuals in others

clinical settings such as private practice and community mental health centers. This would be able to address the limitations regarding a university population and where a wider diversity of clients and presenting issues may be found. Similarly, follow up studies regarding response to therapy and maintenance of gains can be conducted at fixed intervals post-treatment to account for variation in the current study.

Conclusions obtained from this study indicate that treatment duration is not a factor in subjects having positive outcomes to psychotherapy. There was also no difference between individuals who were included into three subgroups (CS, RC clinical and RC non-clinical) of positive responders to therapy in connection to treatment length. Additionally, there was not a significant difference among subjects who were able to maintain treatment gains and the number of session attended in treatment. Lastly, there was no identified relationship between treatment duration and the ability of the three positive responder subgroups to maintain treatment gains.

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