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Evaluation of Counseling Outcomes at a University Counseling Center: The Impact of Clinically Significant Change on Problem Resolution and Academic Functioning

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The main purpose of this study was to investigate how receiving personal counseling at a university counseling center helps students deal with their personal problems and facilitates academic functioning. To that end, this study used both clinical and academic outcome measures that are relevant to the practice of counseling provided at a counseling center and its unique function in an institution of higher education. In addition, this study used the clinical significance methodology (N. S. Jacobson & P. Truax, 1991) that takes into account clients' differences in making clinically reliable and significant change. Pre-intake and post-termination surveys, including the Outcome Questionnaire (M. J. Lambert, K. Lunnen, V. Umphress, N. Hansen, & G. Burlingame, 1994), were completed by 78 clients, and the responses were analyzed using clinical significance methodology. The results revealed that those who made clinically reliable and significant change (i.e., the recovered group) reported the highest level of improvement in academic commitment to their educational goals and problem resolution, compared with those who did not make clinically significant change. The implications of the findings on practice for counseling at university counseling centers and for administrators in higher education institutions are discussed.

Keywords: university counseling center, counseling outcomes, clinically significant change

Traditionally, a central mission of most university counseling centers has been to maximize students' learning experiences by providing various psychological services to assist the students in overcoming personal problems that interfere with their academic achievement (Archer & Cooper, 1998; Cooper & Archer, 2002; Sharkin, 2004). Academic/vocational issues are neither primary concerns of students who seek assistance from university counseling centers (Benton, Robertson, Tseng, Newton, & Benton, 2003) nor the main focus of counseling centers in many higher education settings today. However, implicit in most counseling centers' mission statement is the notion that receiving counseling services will not only help students deal with their personal problems but also promote their subsequent academic success. In the past, a few studies have attempted to examine the connection between personal counseling and academic outcomes, such as retention rate (Illovsky, 1997; Sharkin, 2004; Turner & Berry, 2000; Wilson, Mason, & Ewing, 1997). However, owing to these studies' narrow focus as well as their conceptual and methodological problems, the validity of their findings remains uncertain. Because the actual benefits of counseling for students' academic achievements are not understood, personal counseling may be viewed within the institution as having a minimal effect or even no value. Therefore, it is imperative that before counseling centers engage in evaluating their services, they establish outcome criteria that are consistent with what they actually do for students and with the roles they play in their institution (Sexton, 1996). The main purpose of the present study was to evaluate the effectiveness of counseling rendered at a university counseling center by investigating how clinical gains from personal psychological counseling contribute to students' perceptions about problem resolution and academic functioning.

Personal Counseling and Academic Outcomes

A few studies in the past, contending that the evaluation of counseling outcomes at counseling centers should be tied to the educational outcomes that are central to the university's mission, examined how the students' use of counseling for personal problems related to educational variables such as grade-point average (GPA) and retention/graduation rates. Assuming a direct link between students' use of counseling and academic outcomes, researchers have generally reported that receiving personal counseling has a positive effect on retention (Sharkin, 2004; Turner & Berry, 2000; Wilson, Mason, &

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Ewing, 1997) but have found little support for its effect on GPA (Illovsky, 1997). For example, Turner and Berry (2000) reported that the retention rate (reenrollment) for students who received counseling was greater than the retention rate for the general student body (85% vs. 74%), whereas no differences were found in graduation rates between the two groups over a 6-year period.

Although these studies appear to show that favorable counseling outcomes boosted academic endeavors, questions remain as to how clinical gains from psychological counseling aimed at resolving personal issues aid students' academic achievement. Two major conceptual and methodological issues in the previous studies appear to contribute, to some degree, to the ambiguity of their findings. First, the previous studies relied mainly on methodological approaches that compare retention or graduation rates between students who have received counseling at a counseling center and the general student population. Unfortunately, the findings from studies using these comparison methods provide no information on individual differences in students' response to treatment or on the variability in clinical progress within the client group of students who received counseling. Although an extensive body of research shows the effectiveness of psychotherapy in general, it has been noted that clients with different mental problems and symptom clusters make clinical improvements at a different pace and in different phases (Lambert & Hawkins, 2004). Given that psychological counseling provided at counseling centers varies in its focus and that the range of presenting problems is broad, it is crucial to recognize the variability of clinical progress within a client population and to investigate how students' academic functioning is influenced by their differing degrees of clinical functioning.

Second, the previous studies used retention and graduation rates as outcome measures of counseling, under the assumption that receiving counseling has a direct impact on students' reenrollment and graduation. Although student-retention and graduation rates are important information for a higher education institution seeking to gauge students' academic accomplishments, enhancing them is not necessarily a primary goal of personal counseling provided at counseling centers. A counselor remains neutral, even when students consider transferring to another school or halting their studies for various personal reasons, and assists students in dealing with their personal problems more effectively so that they can make the decision that is most suitable for them. Moreover, the vast majority of reasons for students' leaving school have been found to be personal and situational (e.g., financial strains or problems caused by distance from home; Payne, Pullen, & Padgett, 1996). Thus, to view students' reenrollment and graduation as the direct result of counseling services ignores the complexity of retention issues, as well as the diverse personal reasons that bring students to counseling centers (Illovsky, 1997; Sharkin, 2004). When the effectiveness of counseling at counseling centers is evaluated, these institutional academic outcome variables should be used only in conjunction with other academic outcome criteria that are not only relevant to what counselors actually do for students but also proximal to the psychological changes attributable to the counseling.

These two conceptual and methodological issues were addressed in the present study in the following ways: (a) It used clinical significance methodology to take into account the variety of individual responses to treatment and the practical significance and meaningfulness of individual change; (b) as an alternative to using administrative measures of academic outcomes, such as attrition and graduation, this study chose students' academic functioning as an academic outcome criterion that is more likely to be both a direct and an indirect result of personal counseling.

Evaluation of Counseling Outcomes: Clinically Significant Change

Under the assumption that clinically significant change involves a return to normal functioning, Jacobson and Truax (1991) proposed the statistical approach that employs two steps to determine the clinical significance of an individual client's change on an outcome measure. The first step involves calculating the Reliable Change Index (RCI) and determining whether an individual client's change can be considered reliable. If the change is of a magnitude greater than the RCI, the pre-treatment to post-treatment change is viewed as reliable and not a product of random fluctuations on the outcome measure. The second step involves determining a cutoff point between functional and dysfunctional samples and examining the client's post-treatment score to see if, according to the outcome measure, he or she has moved out of a dysfunctional population and into a functional population. The analyses in this study involved categorizing each client's change in scores from pre-intake to post-termination into five outcome groups according to the classification system used by Snell, Mallinckrodt, Hill, and Lambert (2001). These outcome groups are (a) "improved and recovered" (i.e., clients whose score decreases by the RCI or more and moves them from dysfunctional population into the functional population); (b) "improved only" (i.e., clients whose score decreases by the RCI or more but does not cross the cutoff at post-termination, remaining either in the dysfunctional range or the functional range); (c) "never dysfunctional" (i.e., clients who started and ended in the functional range without a significant change); (d) "unchanged, dysfunctional" (i.e., clients whose score started and ended in the dysfunctional range with a change that is less than the RCI); and (e) "significantly deteriorated" (i.e., clients whose score increases by the RCI or more in a negative direction).

Counseling Outcomes on Problem Resolution and Academic Functioning

The present study used both clinical and academic outcome measures that are proximal to the practice of counseling provided at a counseling center. First, problem resolution is not only an integral process and outcome of counseling in general (Fretz, 1982) but also an implicit purpose of counseling provided at counseling centers where students are assisted to better cope with and solve their personal problems so that those problems do not interfere with their academic performance (Archer & Cooper, 1998; Cooper & Archer, 2002; Wilson et al., 1997). Helping students to resolve personal problems is tied to the primary function of counseling centers, and assessing whether their problem-solving abilities have improved is a vital element in the evaluation of counseling effectiveness at counseling centers (Heppner, Cooper, Mulholland, & Wei, 2001). The present study chose resolution of personal problems as one of the evaluation criteria and investigated the effects of students' clinical improvement on their perceptions of how effectively their presenting problems have been resolved.

Second, the present study investigated how clients' academic functioning is influenced by the level of clinical improvement they achieved after receiving personal counseling. Academic functioning is defined as the ability to manage—in wide range of cognitive, emotional, and behavioral respects—the various educational demands at an institution. Specifically, academic adjustment and commitment to educational goals at the specific institution attended are two important factors that constitute student, academic functioning. The findings of Nafziger, Couillard, and Smith (1999), one of a few studies that reported the impact of counseling on academic functioning, suggested that clinical gains from counseling might have a global impact on various aspects of students' personal functioning. In their study, students who received counseling at a counseling center showed a significant improvement in academic and career areas as well as in clinically related concerns, even when the personal counseling did not focus on academic/vocational issues. In interpreting this finding, the authors noted that "college adjustment is a holistic construct and that improvements in psychological and social functioning may have positive ripple effects in other areas, such as academic functioning" (p. 9).

Method

Participants

The participants consisted of 78 students (69% female and 31% male) who were enrolled at a midsize, mid-Atlantic university in a suburban setting and who sought counseling at the counseling center during a single academic year. The total student population of this university is about 10,000 students. The age of the participants ranged from 18 to 47 years ($M = 21.87$, $SD = 5.18$). Most of them were single (94%); 3 were married, and 2 were separated. The breakdown of academic standing was 18% freshmen, 20% sophomores, 31% juniors, 21% seniors, and 10% graduate students. The majority of the students were Caucasian (63%), followed by African American (12%), Asian American (9%), and Hispanic (8%). One participant indicated ethnicity as Native American, and 7% did not state any ethnicity. Some students (39%) reported having had some type of psychological treatment elsewhere before they came to the counseling center, and 24% of them reported taking prescribed psychotropic medication during the data-collection period. The number of sessions attended by the participants ranged from 1 to 36 ($M = 6$, $SD = 5.8$; median = 4; mode = 1). Students who attended only one session made up 19% of the sample, whereas 10% of the students had more than 12 sessions. The reason most frequently reported by therapists for students' termination of counseling was "accomplished goals" (58%), followed by "end of semester" (24%) and "did not return" (10%).

Procedure

When students arrived for their scheduled intake appointment for counseling at the counseling center, the support staff handed out the Counseling Experience Survey along with the clinical paperwork that must be filled out prior to an intake session with a counselor. Each student was asked to read the information provided in the survey regarding the purpose and procedures of the current study. The description informed the students that (a) their decision regarding participation in the survey would not affect their eligibility for services or the nature of counseling they needed to receive; (b) their participation was voluntary and anonymous; (c) the data they provided would be confidential; (d) the survey would take approximately 15 to 20 min to complete; and (e) their participation would entail two surveys, the first supplied at this time and the second mailed out to them immediately after they either completed or decided to discontinue their counseling at the center. The students were asked to return the completed pre-intake survey to the support staff along with the required clinical paperwork. The counselors at the center were asked to make a report to the primary investigator (the first author) when all of their clients had completed counseling or stopped coming in so that the follow-up survey could be mailed to their clients within three weeks of the termination of counseling. As a small incentive to participate, the students who completed both the pre-intake and post-termination questionnaires were eligible at the end of data collection to enter a raffle for one of three $50 gift certificates redeemable at the university bookstore.

In the academic year during which the study was conducted, a total of 520 students contacted the counseling center. Among those who showed up for an initial intake appointment, 424 students completed the pre-intake survey. After their counseling ended, 83 students returned their post-termination questionnaire. After five students who had not initially completed the pre-intake survey were removed, the study's final sample comprised 78 participants who had completed both pre-intake and post-termination surveys. Six counselors, including the three authors of this article, were on staff at the counseling center while this study was conducted: four licensed clinical psychologists (three full-time and one part-time) and two predoctoral psychology interns (both part-time). One of the psychologists was a male, three psychologists were female, and the two trainees were female. The majority of the students were seen by the psychologists (90%), and six were seen by the trainees. The counselors mostly identified themselves as integrative and did not endorse any particular theoretical orientations. There was no limit on the number of sessions that the clients could attend at the center. The counselors (except the first author) were kept blind to client participation in the survey and did not have access to survey data for the duration of the data-collection period.

Instruments

Counseling outcomes. The Outcome Questionnaire (OQ-45; Lambert, Lunnen, Umphress, Hansen, & Burlingame, 1994) was used to measure counseling outcomes. The OQ-45 consists of 45 items to which responses are given on a 5-point Likert-type scale (0 = *never*, 1 = *rarely*, 2 = *sometimes*, 3 = *frequently*, 4 = *almost always*); higher scores correspond to increasing level of psychopathology. The OQ-45 contains three subscales that are aimed at assessing different domains of client functioning: Symptoms Distress, Interpersonal Functioning, and Social-Role Functioning. Three-week test–retest reliabilities were reported with a range from .78 to .84, with internal consistency (Cronbach's alpha) of .93 in a sample of the nonclinical and clinical samples. For this study, the internal consistencies of the total score of OQ-45 were .93 at pre-intake and .92 at post-termination.

Problem resolution. The Problem Resolution Outcome Survey (PROS; Heppner et al., 2001) was used to assess the clients'

perceptions of how well they are handling and solving the problems that initially brought them to counseling. PROS is a nonsymptom-based, multidimensional self-report instrument that contains 24 items and consists of four subscales that measure problem-solving strategies and self-efficacy, problem impact on daily functioning, and general satisfaction with therapy. The general satisfaction with therapy subscale was not included in this study, because the items have no relevance before intake to clients who have not yet received counseling. The participants reported the extent to which they agreed with each statement that described how they were dealing with the problems for which they were currently seeking therapeutic assistance (1 = *strongly agree*, 6 = *strongly disagree*). The internal consistencies for the subscales were reported, ranging from .79 to .81 in a sample of university counseling center clients (Heppner et al., 2001). Construct and convergent validities were established by demonstrating that increases in university counseling clients' resolution of their presenting problems throughout the course of therapy were positively related to well-established counseling processes and to outcomes such as clients' report of working alliances, perceptions of counselor credibility, and results of individualized counseling. The internal consistencies of the PROS for the present study at preintake and at post-termination were .67 and .71, respectively.

Academic functioning. Academic functioning was assessed by two subscales of the Student Adaptation to College Questionnaire (SACQ; Baker & Siryk, 1989): Academic Adjustment (AA) and Institutional Attachment/Goal Commitment (IA/GC). The Academic Adjustment (AA) subscale consists of 24 items that measure a student's success in coping with the various educational demands typical of college; these include motivation, application of motivation to academic efforts, performance, and satisfaction with the academic environment. The Institutional Attachment/Goal Commitment subscale (IA/GC) consists of 15 items that measure a student's degree of commitment to educational–institutional goals and his or her degree of attachment to the particular institution attended. The participants are asked to rate how closely each statement applies to them at the present or within the past few days, on a scale from 1 (*doesn't apply to me at all*) to 9 (*applies very closely to me*). High scores indicate better adjustment. Significant correlations were found between AA and both GPA and election to an academic honor society during the junior or senior year (Baker & Siryk, 1984). Attrition was negatively correlated with the IA/GC subscale in a sample of undergraduate students (Gerdes, 1986). The internal consistencies of the AA subscale and the IA/GC subscale at pre-intake and at post-termination in this study were .82 and .87, and .81 and .83, respectively.

Results

The comparability between those in the final sample of this study ($N = 78$) who completed both pre-intake and post-termination surveys and the group of students who completed the pre-intake survey but did not respond to a follow-up post-termination survey ($N = 346$) was examined. The results of chi-square tests indicated that the two groups were not significantly different on demographic variables (i.e., age, gender, ethnicity, academic year, and marital status). The comparability between the two groups on the initial level of psychological distress and of problem resolution at pre-intake was examined. A one-way analysis of variance revealed no significant group effect: for the OQ-45, $F(1, 417) = 0.33$, $p = .56$, Cohen's $d = –.06$; and for the PROS, $F(1, 418) = 2.00$, $p = .15$, Cohen's $d = –.17$. The total mean score of the OQ-45 for the pre-intake only group was 69.14 ($SD = 20.33$), whereas that for the final group was 71.67 ($SD = 27.92$). The total mean score of the PROS for the pre-intake only group was 72.18 ($SD = 11.66$), whereas that for the final group was 74.37 ($SD = 10.47$).

For the final sample of this study ($N = 78$), bivariate correlation analyses were conducted to examine the relationships between the four major outcome variables at pre-intake and post-termination (see Table 1). There was an increase in the means of the variables from pre-intake to post-termination in a positive direction, indicating general improvement in personal and academic functioning. The OQ-45 scores and the two measures of academic functioning (i.e., AA and IA/GC) were significantly negatively correlated both at pre-intake and at post-termination. The results indicate that there is a significant association between participants' personal functioning and academic functioning in an expected direction: The

Table 1
Means, Standard Deviations, and Correlations Among the Variables at Pre-Intake and Post-Termination

Variable	*M*	*SD*	1	2	3	4	5	6	7	8
Pre-intake										
1. PROS	74.37	10.47	—							
2. AA	94.30	19.14	.28*	—						
3. IA/GC	138.51	31.11	.13	.34**	—					
4. OQ-45[a]	71.02	27.92	−.27*	−.50***	−.40***	—				
Post-termination										
5. PROS	85.17	10.25	.17	.07	.02	.01	—			
6. AA	99.76	20.23	.11	.71***	.17	−.29**	.09	—		
7. IA/GC	147.20	27.71	.08	.17	.43***	−.25*	.09	.47***	—	
8. OQ-45[a]	52.41	24.11	−.20	−.29**	−.33**	.56***	−.14	−.42***	−.53***	—
Residual gain partial correlations			—	—	—	—	−.18	−.33**	−.48***	—

Note. PROS = Problem Resolution Outcome Survey (Heppner et al., 2001); AA = academic adjustment; IA/GC = institutional attachment/goal commitment; OQ-45 = Outcome Questionnaire-45 (Lambert, Lunnen, Umphress, Hansen, & Burlingame, 1994). $N = 78$, except for correlations involving AA and IA/GC were $N = 77$.
[a] OQ-45 higher scores correspond to increasing level of psychopathology.
* $p < .05$. ** $p < .01$. *** $p < .001$.

students with a higher level of personal functioning were more likely to report a higher level of academic functioning.

On the basis of clinical significance methodology, the clients' changes in OQ-45 scores at pre-intake and post-termination were analyzed to classify each client into one of five outcome groups. This study used the value of the two determining criteria provided by Lambert et al. (1994): (a) 14 for RCI and (b) 64 or higher as the cutoff score for dysfunctional functioning. Table 2 shows the numbers and percentages of clients belonging to different categories of outcome status. The "improved and recovered" group was the largest (32%), followed by "never dysfunctional" and "unchanged" (each at 23%). The "improved only" group made up 16% of the clients; and 6% were categorized as "significantly deteriorated," a percentage within the range that has been reported in the literature as typical (5%–10%; Lambert & Ogles, 2004). The functional group, who started therapy with a score of 63 or below, made up of 34% ($n = 27$) of the sample. This number of proportion for the functional group is consistent with the observations in other counseling centers in which a large number of clients begin counseling with symptoms already in a functional range (Snell et al., 2001). For instance, Anderson and Lambert (2001) reported that 29% of clients (22 out of 75) in their sample at a university-affiliated outpatient clinic began therapy in the functional range of symptoms. Table 2 also shows that the mean number of sessions attended ranged from 2.60 to 7.64 for the five outcome groups.

To investigate how individual differences in clinically significant change have an impact on problem resolution and academic functioning, three outcome groups were chosen: improved and recovered; improved only; and unchanged, dysfunctional. The never dysfunctional group was not included because the scores of its members remained in the functional range with no clinically significant change. The significantly deteriorated group was excluded as well because of its small size ($n = 5$). First, an omnibus test was conducted to see if there is an interaction effect between the three outcome groups and the two levels of time (i.e., pre-intake and post-termination) on PROS, AA, and IA/GC. A repeated-measures mixed-model multivariate analysis of variance, with levels of time as a repeated factor and three outcome groups as a between-subjects factor, revealed that there was a significant main effect for both the two levels of time, Wilks's lambda = .65, $F(3, 73) = 13.03$, $p = .000$, and for the outcome groups, Wilks's lambda = .82, $F(3, 73) = 5.01$, $p = .003$. The interaction effect between the levels of time and the outcomes groups was also significant, Wilks's lambda = .88, $F = (3, 73) = 3.12$, $p = .03$. This test was followed by three univariate analyses of covariance (ANCOVAs), covarying out the effects of the pre-intake levels on these variables. Three one-way between-subjects ANCOVAs were performed to investigate the main effect of outcome group status on each outcome variable (i.e., PROS, AA, and IA/GC) at post-termination. The results of three ANCOVAs are summarized in Table 3. The significant main effect for outcome group status was found for IA/GC and PROS but not for AA. The post hoc tests using the Bonferroni correction were performed to compare means of the outcome groups for both PROS and IA/GC at post-termination. The means of the improved and recovered groups were significantly higher than that of the unchanged group, whereas the improved group was not significantly different from the unchanged group and from the improved and recovered group.

Discussion

As postulated, the findings from this study generally support the belief that there are connections between students' psychological distress and academic functioning and that counseling can be instrumental in helping students to resolve their personal problems and can aid students' persistence in achieving their educational goals. Positive relationships were found between personal functioning and academic functioning, with an improvement in both areas after counseling was rendered. The findings from this study support the notion that counseling outcomes may have "ripple effects" on academic functioning (Nafziger et al., 1999) in such a way that the positive changes in personal life gained from counseling may be transmittable to manifold areas of students' personal functioning. To achieve academic success may require a certain level of academic functioning that is fundamentally connected with some critical aspects or level of personal functioning. Central aspects of personal functioning and of academic functioning may overlap a great deal, especially when college students' psychological development processes are understood, as in Chickering (1969), in terms of core developmental tasks (i.e., achieving competence, managing emotions, developing autonomy, establishing identity, freeing interpersonal relationships, developing purpose,

Table 2
Classification of Outcome Groups Based on Client Clinically Significant Change Status

	Reliable change status							
	Significantly improved		No significant change		Significantly deteriorated		Total	
Change across cutoff score	*n*	%	*n*	%	*n*	%	*n*	%
Stayed functional	4[b]	5	18[c]	23	2[e]	2.5	24	30.5
Recovered	25[a]	32	3[d]	4	—	—	28	36
Deteriorated	—	—	1[d]	1	2[e]	2.5	3	3.5
Stayed dysfunctional	8[b]	10	14[d]	19	1[e]	1	23	30
Total	37	47	36	47	5	6	78	100

Note. Percentages are based on the total sample. Dashes indicate no possible outcomes in the cell.
[a] Improved and recovered, $n = 25$ (32%), $M = 7.64$ ($SD = 5.13$). [b] Improved only, $n = 12$ (16%), $M = 5.67$ ($SD = 5.53$). [c] Never dysfunctional, $n = 18$ (23%), $M = 3.44$ ($SD = 2.97$). [d] Unchanged, dysfunctional, $n = 18$ (23%), $M = 7.44$ ($SD = 8.39$). [e] Significantly deteriorated, $n = 5$ (6%), $M = 2.60$ ($SD = 1.51$).

Table 3
Means and Standard Deviations Among Three Outcome Groups and ANCOVA Results

	Outcome group						ANCOVA				
	Improved and recovered		Improved only		Unchanged, dysfunctional						
Variable	*M*	*SD*	*M*	*SD*	*M*	*SD*	*df*	*MS*	*F*	*p*	η^2
1. PROS											
Pre	73.24	11.29	73.60	5.66	70.44	10.63	1	669.05	10.40	.002*	.17
Post	89.28[a]	7.86	82.20	5.92	80.22[b]	10.90	2	396.41	6.16	.004*	.20
2. AA											
Pre	89.20	16.57	87.80	16.15	88.22	19.57	1	9139.04	50.45	.000**	.51
Post	100.52	19.01	93.44	18.00	93.83	19.64	2	213.25	1.17	.317	.04
3. IA/GC											
Pre	134.88	21.89	132.40	29.50	128.88	31.66	1	8609.32	15.37	.000**	.24
Post	154.76[c]	23.10	140.66	24.58	128.16[d]	32.39	2	2938.71	5.24	.009*	.18

Note. ANCOVA = analysis of covariance; PROS = Problem Resolution Outcome Survey (Heppner et al., 2001); AA = academic adjustment; IA/GC = institutional attachment/goal commitment. Post hoc tests comparing pairs of [a] and [b] and [c] and [d] were significant at $p = .007$.
* $p < .01$. ** $p < .001$.

and developing integrity) that take place both in personal and in academic life at college.

However, as indicated in the findings from the clinical significance methodology in this study, the benefit and impact of counseling on students' functioning, both personally and academically, appear to be much more tightly intertwined with the process and outcome of counseling for each individual client. Differences in individual clients' responses, as reflected in counseling outcome group status in this study, showed a differential impact of counseling on academic functioning and sense of problem resolution. It was the clients who reached clinical recovery (32% of the sample)—namely, those whose symptoms were in the dysfunctional range at pre-intake but underwent significant change and were no longer dysfunctional at the end of counseling—who demonstrated the highest level of academic commitment and a sense of resolution of their personal problems, distinguishing them from the clients who did not make clinically significant change (i.e., unchanged, dysfunctional). The findings suggest that the clients' full clinical recovery from psychological distress is critical in reestablishing their desire and commitment to complete their higher education. It appears that students whose initial symptoms were in a dysfunctional range experience qualitative improvement in their academic persistence only when they achieve clinical recovery.

Hence, these findings have important implications for clinicians working at university counseling centers. It would be most clinically informative and academically beneficial to routinely monitor and track individual clients' clinical progress with a solid counseling outcome measurement in each session so that both the clinician and client can know how much clinically reliable and significant change the client is making toward a higher level of psychological functioning. To assist clients in reaching a clinically significant recovery, which was found in this study to have the greatest impact on clients' academic persistence, it is important for clinicians to identify what each factor—client, therapist, and the therapeutic environment—is contributing to clients' responses to counseling so that they might modify their counseling approach to enhance positive outcomes, especially for those clients who are making progress very slowly or even deteriorating. For this purpose, the Clinical Support Tool proposed by Lambert and Vermeersch (2008) might be useful for clinicians wishing to systematically assess the quality of the factors (i.e., therapeutic alliance, social support, client's readiness for change, diagnostic formulation, and need for psychiatric referral) contributing to poor counseling outcomes and to introduce timely interventions to respond to the clinical needs of each client.

In planning treatment for clients who are not recovering or whose recovery process is slow, it may also be worthwhile to consider loosening strict session-limit policies, provided that the limited resources within the counseling center allow such an approach. The mean number of sessions attended by the recovered group in this study was 7.64, suggesting that the number of counseling sessions sufficient for this group to reach a clinically significant recovery was about eight. This number is similar to the findings reported by Howard, Kopta, Krause, and Orlinsky (1986) in a meta-analysis review of 15 outcome studies: 53% of the clients were improved after eight sessions and 74% after 26 sessions. But the study by Howard et al. also suggested that a certain proportion of clients needed longer treatment (i.e., 26 sessions) to make clinical improvement, and perhaps the clients in the improved only and unchanged groups in this study might have needed more treatment to gain clinically significant improvement. The mean number of sessions attended was 5.67 for the improved only group and 7.44 for the unchanged group; it is possible that these clients might have benefited from longer-term treatment. Thus, although most counseling centers today follow a flat session-limit policy (e.g., a 12-session limit) to meet the high demands of counseling services on campus, implementing a tiered model of time-limited therapy (e.g., eight sessions for short-term and 20 sessions for longer-term treatment) might offer exceptional benefits to clients who require relatively longer treatment to return to healthy functioning and to persevere academically.

The findings from this study also have practical implications for retention that should be considered by administrators working at institutions of higher education. In collaboration with faculty, academic advisers, and the staff of counseling centers, administrators can explore systematic ways to identify students at psycho-

logical and academic risk as early as possible, so that they can be referred to appropriate resources on campus, including the counseling center. The findings in this study suggest that counseling may significantly contribute to the academic commitment of students who present with serious psychological problems that may place them at greater risk for attrition. More specifically, because those in the recovered group demonstrated the strongest level of commitment to their academic goals and attachment to the university they were attending, the students who are at high risk academically should be encouraged to remain in counseling until their personal functioning is restored to a healthy level. In these efforts, counseling centers may be able to figure prominently among the resources on campus. A university-wide effort to promote students' personal well-being and self-care on campus could also play an important role in enhancing their intellectual experience, especially for those who are vulnerable to stress and have a history of psychological problems and treatment.

The limitations of this study are worth noting. First, the sample size was small as a result of the low response rate (20%), and generalization of the findings should be made tentatively. The problems of low participation and difficulties in collecting data are endemic in psychotherapy outcome studies (Ogles, Lambert, & Fields, 2002). However, Lambert, Hansen, and Bauer (2008) argued that for studies with a small sample size, clinical significance methodology has an advantage because it enables researchers to consider change on the level of the individual client that may not be readily detected by group variance. The findings of this study attest to the value of using clinical significance methodology, which enables researchers to uncover the complexity of counseling processes and outcomes. Second, although the study's sample population was comparable in its demographics and initial level of psychological distress prior to receiving counseling to the students who did not complete the post-termination survey, the findings should be generalized cautiously, because the two groups may have differed in regard to some extraneous variables. Third, the findings in this study rest on correlational analyses, which should not be interpreted as demonstrating a causal relation between counseling and academic outcomes. It is suggested that future research address these issues and continue to investigate differential impact of clinical significance change on various academic/educational outcome variables.

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