

Effects of Training in Dream Recall and Dream Interpretation Skills on Dream Recall, Attitudes, and Dream Interpretation Outcome

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Forty-two volunteer clients with below-average dream recall and attitudes toward dreams participated in training sessions focusing on either improving dream recall and attitudes toward dreams, building dream interpretation skills, or educating about counseling. After training, individual dream interpretation sessions were conducted. No significant differences were found among the 3 conditions in regard to dream recall, attitudes toward dreams, or client- or therapist-reported session outcome, but effect sizes suggested that participants in the skills condition gained more from sessions than did participants in the dream recall-attitudes condition. Session outcome for all volunteer clients was equivalent to those in previous studies of volunteer clients with no training, suggesting that training was not necessary and that these participants were able to benefit from single-session dream interpretation.

Although dreams have long fascinated people, only recently have researchers begun to empirically investigate dream interpretation. Studies have suggested that dream interpretation sessions are viewed as valuable and as leading to self-understanding and insight (Cogar & Hill, 1992; Diemer, Lobell, Vivino, & Hill, 1996; Falk & Hill, 1995; Hill, Diemer, Hess, Hillyer, & Seeman, 1993; Heaton, Hill, Petersen, Rochlen, & Zack, 1998). Although these results are encouraging, it appears that not all people are enthusiastic about participating in dream interpretation. For example, Hill, Diemer, and Heaton (1997) found that only 19% of a large sample of undergraduate students volunteered to participate in a therapist-guided individual dream interpretation session. Compared to those who did not volunteer, students who volunteered had more positive attitudes toward dreams, recalled dreams more frequently, were more open, were higher in absorption (capacity for restructuring one's phenomenal field), and were more often women than men.

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Given these results, and the fact that only 30%–40% of people remember their dreams (Belicki, 1986; Webb & Kersey, 1967), we speculated that training to increase dream recall and improve attitudes toward dreams might lead to a greater willingness to participate in and gain from dream interpretation sessions. Several researchers have shown that it is possible to increase dream recall (Botman & Crovitz, 1990; Halliday, 1992; Redfering & Keller, 1974; Reed, 1973, 1978). However, these studies examined people who were motivated to increase their dream recall, thus raising the question of whether people who are uninterested or unmotivated to work with dreams have the capacity to increase their level of dream recall. Furthermore, we know of no studies that have investigated the possibility of improving attitudes toward dreams. What has been demonstrated is that attitudes toward dreams are the most consistent predictor of dream recall (Cernovsky, 1984; Halliday, 1992; Robbins & Tanck, 1988). These studies have shown that people who have more positive attitudes toward dreams tend to recall dreams on a more frequent basis. Hence, training to increase both improving attitudes toward dreams and dream recall seems potentially useful to prepare people for dream interpretation.

On the other hand, it may be that people do not volunteer for dream interpretation because they do not have the requisite skills. We have observed that some people are able to do the tasks involved in dream interpretation better than others. For example, the cognitive complexity of client dialogue appears to be predictive of session outcome (Diemer et al., 1996; Hill, Nakayama, & Wonnell, 1998). Hence, we speculated that training in the skills used in dream interpretation (e.g., how to provide more detail about dream images, how to associate to dream images, how to make connections to waking life, etc.) would help people to benefit from this intervention.

Although we could find no previous studies of training in attitudes toward dreams or in specific skills needed for dream interpretation, there have been more general investigations of training for therapy. This literature has supported

the use of pretherapy training, suggesting that clients who received pretherapy training had more realistic expectations of therapy, better attendance, and an overall better understanding of the therapeutic process than those who did not receive training (Bonner & Everett, 1986; Coleman & Kaplan, 1990; Deane, Spicer, & Leathem, 1992; Weinstein, 1988). In addition, one study found that training clients to attend to dreams before entering treatment seemed to facilitate their staying in and benefiting from therapy compared to clients who did not receive training (Cartwright, Tipton, & Wicklund, 1980).

Our primary purpose in the present study was to investigate the effects of training for either (a) dream recall and attitudes toward dreams or (b) dream interpretation skills on dream recall, attitudes toward dreams, and outcome of a dream interpretation session. We included training in counseling education to serve as a placebo control for the effects of attention and group participation. We recruited participants who had below-average dream recall and attitudes toward dreams, because previous research has found that these people are less likely to volunteer for dream interpretation sessions (Hill et al., 1997). We reasoned that people with below-average dream recall and attitudes toward dreams would be most in need of training to benefit from an individual dream interpretation session. In addition, we used single sessions of dream interpretation to test for the effects of training. Our rationale was that dream interpretation is often done in a single session as a stand-alone or a mini-therapy and has been shown to be effective when used in this manner (Heaton et al., 1998; Hill et al., 1993, 1997).

Our first hypothesis was that training in dream recall-attitudes toward dreams would lead to higher dream recall and more positive attitudes toward dreams than would training in dream interpretation skills or training in counseling education. Our second hypothesis was that training in dream interpretation skills would lead to a higher outcome (increased levels of satisfaction, insight, and perceived gains) from dream interpretation sessions than would training in dream recall-attitudes or training in counseling education.

Method

Participants

Volunteer clients. Forty-two undergraduate students (26 women, 16 men; 24 European Americans, 7 African Americans, 4 Asian Americans, 1 Hispanic American, 1 Native American, 5 other; 34 without previous counseling, 8 with counseling experience) from a large mid-Atlantic university participated in this study. Participants, who ranged in age from 17 to 36 ($M = 19.36$, $SD = 3.38$), were selected because they had lower than average estimated levels of dream recall and lower than average attitudes toward dreams. Participants were not informed about the purposes of the study; they received course credit for their participation.

Trainers. Two of the trainers for the study (a 25-year-old male master's-level student in counseling psychology and a 25-year-old female doctoral student in counseling psychology) were European American, and one (a 21-year-old female undergraduate honors

student) was Latina. The trainers were also authors of this study (Aaron B. Rochlen, Kristin J. Heaton, and Daniela P. Ligiero).

Therapists. Fourteen counseling and clinical psychology doctoral students (10 women, 4 men; 8 European Americans, 4 African Americans, 2 Asian Americans) at a large mid-Atlantic university served as therapists. The therapists, who ranged in age from 23 to 52 ($M = 30.33$, $SD = 6.89$), had at least one graduate practicum experience and had received training in the Hill (1996) model of dream interpretation. Self-reported ratings of theoretical orientation based on a 5-point scale (1 = *low belief/adherence*, 5 = *high belief/adherence*) identified therapists as psychoanalytic-psychoanalytic ($M = 3.62$, $SD = 1.19$), cognitive-behavioral ($M = 3.61$, $SD = 0.87$), and humanistic-experiential ($M = 3.31$, $SD = 0.75$).

Measures

Demographic questionnaire. A demographic questionnaire, which was developed for and used in this study, included questions about age, gender, race, and counseling history. No indication of the purpose of the study was included on this measure.

Estimated dream recall. To select participants with low estimated frequency of dream recall, we asked them two questions. The first question, from Hiscock and Cohen (1973), was "During the last 2 weeks, immediately upon waking up in the morning, how often could you recall dreaming?" Participants checked one of the following eight possibilities: every morning, just about every morning, most mornings, about every other morning, about 2 mornings a week, about 1 morning each week, once during the 2 weeks, and not once. The highest recall response was scored as 7, and the least frequent response was scored as 0. The second question, from Robbins and Tanck (1988), was "How often do you usually have dreams you remember?" Participants checked one of the following five possibilities: about every night, 2-3 times a week, almost once a week, 1-2 times a month, and less than once a month. The most frequent recall response was scored as 4, and the least frequent recall response was scored as 0. Hill et al. (1997) found a high correlation between the two recall items, $r(360) = .72$, $p < .001$, and summed the two items ($M = 5.68$, $SD = 2.69$); thus we also summed the two items.

Dream diary. To assess changes in dream recall, participants recorded the extent of their dream recall on a daily basis throughout a 6-week period beginning when they agreed to participate and ending on the day of their dream interpretation session. In a procedure modified from Reed (1973), participants rated their level of recall each morning on a 4-point scale of no recall (0), indistinct recall (1), partial recall (2), and whole recall (3). We used the average daily level of recall over a 2-week period as the dependent variable, yielding three distinct testing scores for each participant. There was a correlation of $r(40) = .33$, $p < .05$, in the present study between estimated dream recall and the first 2 weeks of the dream diary. Having participants maintain this diary on a daily basis was intended not to be an intervention for increasing dream recall but rather to provide a means for accurately tracking changes in dream recall based on participation in this study.

Attitudes toward dreams. To assess how participants perceived the value of dreams, we used the 11-item Attitudes Toward Dreams measure developed by Hill et al. (1997) on the basis of previous studies (Cernovsky, 1984; Robbins & Tanck, 1988). Sample items are: "I believe that dreams are one of the most important ways to understand myself," "I do not pay any attention to my own dreams," and "Dreams are too confused to have any meaning to me." Eight questions are answered on a true-false or yes-no basis, 2 questions are answered on a 4-point scale, and the final question

is answered on a 5-point scale. Total scores for the 11 items range from 11 to 29 points. In a factor analysis, Hill et al. found one factor, on which all 11 items loaded above .40, and an internal consistency of .79. Hill et al. reported a mean score of 23.90 ($SD = 3.15$) and found significant positive correlations with both estimated dream recall, $r(334) = .41$, and diary recall, $r(334) = .32$. In the present study, the pretest Attitudes Toward Dreams correlated positively with the pretest estimated dream recall, $r(40) = .34, p < .05$.

Manipulation check for training of participants. A 12-item measure was rationally developed for this study to determine whether trainers adhered appropriately to their assigned condition and whether they were equally enthusiastic and knowledgeable across conditions. Three items were developed for each of four scales: a recall scale (e.g., "The sessions focused on suggestions for how to recall dreams"), a skills scale (e.g., "The session leader led a demonstration of how dream interpretation is conducted"), a counseling education scale (e.g., "The session focused on different approaches [psychoanalytic, behavioral, humanistic] of counseling and therapy"), and a general enthusiasm/knowledge scale (e.g., "The session leader was enthusiastic about the materials he or she presented and discussed"). Participants rated statements on a 5-point Likert scale (1 = *strongly disagree*, 5 = *strongly agree*). The score for each scale was the sum of the three items on that scale. Internal consistencies (alphas) of .95, .95, .92, and .67 were found for the recall, skills, counseling education, and general enthusiasm/knowledge scales, respectively. Scales were nonsignificantly correlated with each other, with the exception that recall and counseling education were related ($r = -.47, p < .01$).

The Depth Scale, a subscale of the Session Evaluation Questionnaire—Form 4 (SEQ; Stiles & Snow, 1984) is a 5-item, widely used, adjective-anchored, self-report measure used by both participants and therapists to evaluate the quality of counseling. The five bipolar items are: valuable—worthless, full—empty, special—ordinary, weak—powerful, and shallow—deep. High scores indicate high levels of perceived quality of the session. Stiles and Snow (1984) reported high validity and internal consistency ($\alpha = .91$ for counselors and .87 for clients). Stiles et al. (1994) found that depth was positively correlated with the Understanding, Problem Solving, and Relationship scales of the Session Impact Scale (SIS; Elliott & Wexler, 1994; .44–.72).

The Understanding Scale (SIS-U) is a subscale of the SIS. The SIS-U is a 3-item self-report measure of the amount of understanding (news about self, news about others, and clearer awareness) experienced in therapy sessions. Participants and therapists use a 5-point Likert scale (5 = *high amount of understanding*) to rate how the session affected them personally. The SIS-U was developed from open-ended client descriptions of significant therapeutic events. Stiles et al. (1994) found an internal consistency (alpha) of .78 for the SIS-U and positive correlations with the Depth, Smoothness, Positivity, and Arousal scales of the SEQ.

The Mastery–Insight Scale (MIS; Kolden, 1991) assesses the level of mastery and insight gained by clients in sessions (e.g., "I feel I got more understanding of the reasons behind my behavior and feelings"). The five items are rated on a 3-point Likert scale ranging from *no* (0) to *a lot* (2). Hill et al. (1993) found an internal consistency (alpha) of .79 for the client-rated MIS; Hill et al. (1997) found internal consistencies (alphas) of .78 for clients and .84 for therapists. Furthermore, intercorrelations among the Depth Scale, the SIS-U, and the MIS were high and significant for both clients (range: .54–.73) and therapists (range: .71–.74) in Hill et al.'s (1997) study.

Therapist adherence to the stages of the Hill (1996) model. Therapists responded to the following three questions using a 9-point scale (9 = *high level of adherence*): (a) "How completely

did you do the exploration stage?" (b) "How completely did you do the insight stage?" and (c) "How completely did you do the action stage?" To determine whether therapists adhered to the stages, we decided a priori that each therapist had to rate themselves at least 5 or above on two of the three scales and that overall adherence scores needed to be within 1 *SD* of those reported in past studies (Heaton et al., 1998; Hill et al., 1997).

Gains From Dream Interpretation Scale (GDI). The GDI (Heaton et al., 1998) is a 14-item measure of perceived client gains from dream interpretation. Items are rated on 9-point Likert scales, ranging from *disagree strongly* (1) to *agree strongly* (9). This measure is based on client responses to open-ended questions about the most and least helpful components of dream interpretation sessions in Hill et al.'s (1997) study. Examples of items are: "During the session, I was able to re-experience the feelings I had in my dream," and "I learned a new way of thinking about myself and my problems." Heaton et al. (1998) conducted a principal-components analysis that revealed three factors: Exploration/Insight Gains (7 items, $\alpha = .83$), Action Gains (5 items, $\alpha = .82$), and Experiential Gains (2 items, $\alpha = .79$). Correlations among scales ranged from .46 to .65. For the present study, the alphas for the Exploration/Insight, Action Gains, and Experiential Gains scales were .83, .76, and .83, respectively. Exploration/Insight Gains was correlated with Action Gains, $r(40) = .71, p < .001$; and with Experiential Gains, $r(40) = .39, p < .01$; and Action Gains was correlated with Experiential Gains, $r(40) = .44, p < .01$.

Procedure

Training the trainers. Scripts of the training sessions for the three conditions (recall, skills, and counseling education) were developed and critiqued by all four authors. The three trainers then met and practiced until they felt comfortable with the content of each session and assured that they could conduct each session effectively and consistently.

Recruiting participants. Participants were recruited from introductory psychology classes through sign-up sheets for a study called "Personality Plus." Dreams were not mentioned on the sign-up sheet to ensure that people who did not recall or value dreams were not discouraged from signing up. When the 265 volunteers arrived at the pretesting session, they signed a prestudy consent form and then completed the demographic questionnaire, Attitudes Toward Dreams Scale, and dream recall scale, in a random order. One participant was dropped because of incomplete data, leaving a final screening sample of 264. After the questionnaires had been completed, participants were asked to wait while their measures were scored to determine if they were eligible to participate in the next part of the study. Cutoff criteria were scores ≤ 5 on the estimated dream recall measure and ≤ 24 on the Attitude Toward Dreams measure, based on the mean scores in Hill et al.'s (1997) study. Mean scores for the volunteer clients who eventually participated in the study were 3.37 ($SD = 1.59$) and 20.52 ($SD = 2.71$) for the estimated dream recall and Attitudes Toward Dreams measure, respectively.

Of the 264 students who were screened, 63 met the criteria for participation in the remainder of the study, although 17 chose not to continue because they had already completed research requirements for their courses or were unwilling to commit to a 6-week study. Participants who were not selected or who chose not to continue in the remainder of the study were debriefed and received credit for their participation.

The 46 participants who met the criteria and wished to continue were informed that the purpose of the study was to assess the effects of three different training programs on the outcome of a dream interpretation session. They were also informed about the

requirements for the project (keeping a dream diary for 6 weeks, attending two 1-hr training sessions, and participating in a 60- to 90-min individual dream interpretation session). All interested students signed a second consent form.

Participants were randomly assigned to one of the three training conditions (recall, skills, or counseling education). The first training sessions were scheduled 2 weeks after the pretesting, and the second training sessions were scheduled 2 weeks after the first sessions. Each of the trainers conducted one group in each of the three conditions, yielding a total of nine groups with 3–7 volunteers in each group. Volunteers in all conditions were asked not to discuss their training sessions with other volunteers.

Three volunteers did not attend the first training session and were dropped. A fourth participant was dropped because she switched trainers for her second training session because of a time conflict. Hence, 42 participants completed all phases of the study.

Training for dream recall. The initial session in this condition was devoted to a discussion of the benefits of attending to dreams (e.g., for enhancing creativity, for problem-solving strategies, and for using as a life journal). In addition, specific suggestions were presented for trying to recall dreams (e.g., keeping a journal of waking events and concerns in tandem with a dream diary, keeping a journal for dreams right next to one's bed, repeating to oneself while falling asleep the intention of recalling one's dream, and lying still on awakening while trying to recollect a dream). The benefits of attending to dreams and suggestions for increasing recall were selected on the basis of their presence in multiple texts on dream interpretation (e.g., Cartwright & Lamberg, 1992; Hill, 1996; Van de Castle, 1994). Participants were given a copy of the list of suggestions to take home and review. They were encouraged to try one or two suggestions of their choice and not to be discouraged if they did not see immediate results. In the second training session, trainers asked participants to talk about which methods they had tried, which were helpful and which were not helpful for increasing dream recall. Participants who had not improved their level of recall were encouraged to try different suggestions. Participants were reminded after each training session to maintain the dream diary and to show up for their individual dream interpretation session.

Training for dream interpretation skills. The primary focus of the first session was both to familiarize participants with a model of dream interpretation (Hill, 1996) and to practice the skills needed to work with dreams. A brief summary of the assumptions of the model and a description of the steps involved in each of the three stages was provided. The trainer then facilitated a group dream interpretation based on each person reacting to a sample dream as if it were his or her own. Specifically, each participant had the opportunity to associate to the major images of the dream, to make connections from these images to events in his or her present life or early childhood, to identify themes or possible meanings in the dream that were related to his or her life, and to identify potential opportunities for change in his or her life. During the second session, participants again practiced the skills they had learned during the first session on a different sample dream. Participants were reminded after each training session to maintain the dream diary and to show up for their individual dream interpretation session.

Training for counseling education. The purpose of these sessions was to discuss the process of counseling, including an exploration of different theoretical orientations and modes of therapy. We speculated that a condition focused on education about different types of counseling would serve as a credible placebo control for the effects of the other two conditions, in that participants would receive an equal amount of time and attention in all three conditions. Moreover, although this training was not

related to dreams, training about counseling serves as credible preparation for an individual dream interpretation session.

The focus of the first session centered on an overview of different modalities of counseling (i.e., individual, marriage, family, group). The second training session focused on discussing different theoretical orientations to counseling (i.e., psychoanalytic, humanistic, cognitive-behavioral). Both sessions showed portions of a counseling education videotape (Trussel & Ratner, 1990) as part of the training. The videotape was frequently interrupted to encourage participants to share their perspectives on the topic as well as to answer questions. Aside from reminding participants to maintain the dream diary and to show up for the individual dream interpretation session, dreams were not discussed in these sessions.

Posttesting after training sessions for all conditions. Each participant completed the Attitudes Toward Dreams measure and turned in his or her dream diaries at the end of each training session. In addition, each participant completed the manipulation check measure at the end of the second training session. After posttesting in the second session, participants were informed of the date of their individual dream interpretation session and were reminded to maintain their dream diaries until this session.

Therapist training. Therapists first read Hill's (1996) dream interpretation book. They then attended a 10-hr training session that included a theoretical discussion of the model, practice in a group setting, practice in dyads on each other's dreams and, finally, a practice session with a volunteer client. Practice sessions were monitored, and therapists were provided with feedback by observers who were experienced in using the Hill model of dream interpretation.

Dream interpretation session. Approximately 2 weeks after the second training session, volunteer clients participated in a dream interpretation session with a randomly assigned (based on time availability) therapist. Therapists were not aware that participants had been through training. In the 60- to 90-min session, therapists covered all three stages of the Hill model: exploration, insight, and action. The exploration stage involves telling the dream in the present tense, trying to re-experience the feelings evoked in the dream, providing more detail about the major images, associating to the major images, and making connections to waking life. The insight stage includes coming to an understanding of the meaning of the dream in terms of the experience of the dream, waking life, past life, or parts of oneself. Finally, the action stage involves helping clients decide what to do differently in dreaming or waking life on the basis of what they learned from the dream. According to Hill (1996), this model needs to be carried out in a collaborative manner, in which the therapist serves as a guide and collaborator rather than an expert who knows the meaning of the dream.

Immediately after the session, participants completed the Depth Scale, GDI, MIS, and SIS-U in a random order. They also answered open-ended questions regarding their experiences of the entire study. Concurrently, therapists completed the Depth Scale, MIS, SIS-U, and adherence measure in a random order.

Results

Preliminary Analyses

Differences based on eligibility to participate. Chi-square analyses indicated no differences in gender, $\chi^2(2, N = 264) = 1.56$, or ethnicity, $\chi^2(2, N = 264) = 7.73$, among the participants who did not qualify, who did qualify but did not participate, and who qualified and participated in

the study. In addition, one-way analyses of variance (ANOVAs) revealed no significant difference in age, $F(2, 261) = 1.38$, although there were significant differences among the three groups in estimated dream recall, $F(2, 261) = 66.84$, $p < .001$, and score on the Attitudes Toward Dreams measure, $F(2, 261) = 69.54$, $p < .001$. Post hoc Scheffé contrasts indicated that participants who had not qualified for the study scored significantly higher in both estimated dream recall and attitudes toward dreams than those who qualified and either did or did not participate, indicating that our selection criteria were effective. No differences were found between those who qualified and participated and those who qualified and did not participate.

Manipulation check. Table 1 shows the mean scores on the four different manipulation scales for participants in the recall, skills, and counseling education conditions. We conducted separate one-way ANOVAs with trainer and condition as the independent variables and the four manipulation scales as dependent variables, using an alpha of .01 (.05/4) because there were four manipulation scales. Significant main effects for condition were found for the recall scale, $F(2, 39) = 28.25$, $p < .001$; the skills scale, $F(2, 39) = 25.70$, $p < .001$; and the counseling education scale, $F(2, 39) = 51.31$, $p < .001$. In each case, the participants in the assigned condition scored higher on the appropriate scale than those in the other two conditions, with participants in the other two conditions not differing from each other. No main effects for condition were noted on the general enthusiasm/knowledge scale. No Trainer \times Condition interactions or main effects for trainer were observed on any of the four scales. Thus, the participants perceived that the trainers were doing what they were supposed to do in each of the three conditions and that trainers were equally enthusiastic and knowledgeable.

Therapist adherence. Therapists reported adhering to the stages of the Hill (1996) model an average of 7.46 ($SD = 1.52$) in the exploration stage, 7.11 ($SD = 1.56$) in the insight stage, and 6.49 ($SD = 1.53$) in the action stage. In addition, all therapists included in the analysis rated themselves at least 5 or above on two of the three scales. The mean scores for therapist adherence in this study are within a standard deviation of those found by Hill et al. (1997) and Heaton et al. (1998), suggesting that therapists perceived that they adhered to the stages of the Hill (1996) model.

Table 1
Means and Standard Deviations for Manipulation Scales

Scale	Training condition					
	Recall ($n = 14$)		Skills ($n = 14$)		Counseling ($n = 14$)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Recall	13.79	1.42	7.64	3.54	5.36	2.65
Skills	7.79	4.32	13.43	1.99	4.93	2.37
Counseling	5.64	2.17	7.57	2.90	14.00	1.30
General	13.71	1.27	13.36	1.50	13.64	1.39

Note. Each scale was composed of the sum of three items rated on a 1–5 Likert scale (1 = low, 5 = high). Minimum score was 3, maximum score was 15.

Table 2
Means and Standard Deviations for Manipulation Check Scales, Dream Diary, Attitudes Toward Dreams, and Session Outcome Measures

Measure	Training condition					
	Recall ($n = 14$)		Skills ($n = 14$)		Counseling ($n = 14$)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Dream diary						
Weeks 1–2	1.09	0.44	1.03	0.39	1.27	0.46
Weeks 3–4	1.03	0.39	0.76	0.36	1.05	0.41
Weeks 5–6	1.10	0.52	0.74	0.38	1.14	0.53
Attitudes Toward Dreams						
Pretest	20.43	2.67	20.14	2.66	21.14	3.06
Session 1	21.29	2.84	21.50	3.20	21.57	3.63
Session 2	21.36	2.90	21.86	3.13	21.64	4.14
Therapist-rated outcome						
MIS	0.76	0.52	0.89	0.43	0.93	0.47
Depth	4.54	1.64	4.80	1.25	4.73	1.12
SIS-U	2.45	0.90	2.54	0.93	2.97	0.83
Client-rated outcome						
MIS	1.11	0.46	1.33	0.43	1.20	0.46
Depth	5.43	0.78	5.96	0.73	5.77	0.85
SIS-U	3.33	1.04	3.52	0.71	3.50	1.08
Expl/Insight Gains	7.48	1.48	8.04	0.96	7.92	0.82
Action Gains	6.03	1.41	7.01	1.34	6.79	1.22
Experiential Gains	7.00	1.70	6.79	1.97	7.32	1.48

Note. Higher scores indicate higher levels on each measure. MIS = Mastery–Insight Scale; Depth = Depth Scale of the Session Evaluation Questionnaire; SIS-U = Session Impact Scale—Understanding subscale; Expl/Insight Gains = Exploration/Insight Gains.

Descriptive data. Means and standard deviations for all measures are shown in Table 2. Correlations among the therapist-rated session outcome measures ranged from .61 to .71. Correlations among the client-rated session outcome measures ranged from .39 to .72. Because the correlations were not consistently above .70, we did not combine measures for a composite outcome score but instead used multivariate analyses.

The therapist-reported MIS, SEQ Depth, and SIS-U scores for this sample were within a standard deviation of Hill et al.'s (1997) data for single-session dream interpretation sessions. The client-reported MIS, SEQ Depth, SIS-U, Exploration/Insight gains, Action Gains, and Experiential Gains for this sample were within a standard deviation of Heaton et al.'s (1998) data. Hence, therapist- and client-reported outcomes in the present study did not differ from those of clients with a range of dream recall and attitudes toward dreams who did not have any presession training and who chose to participate in dream interpretation.

We also compared the participants in this study with a subsample of 8 participants in Zack and Hill's (in press) study who met the same criteria on dream recall and

attitudes toward dreams but did not receive training. These participants were from the same population (undergraduate introductory psychology students during the same semester at the same university). Our sample was within a standard deviation of Zack and Hill's sample on all therapist- and client-reported outcome measures. Hence, therapist- and client-reported outcomes for the present study were not different from those of other participants who were low in dream recall and attitudes toward dreams but who had no presession training.

Effects of Training

Because we analyzed four primary sets of data (dream recall, attitudes toward dreams, client-reported session outcome, and therapist-reported session outcome), we used a Bonferroni-adjusted alpha of .01 (.05/4).

Changes in dream recall. We conducted a repeated-measures ANOVA, with dream recall measured by the dream diary as the dependent variable, time as the within-subject independent variable (baseline to first training session, first training session to second training session, and second training session to the dream interpretation session) and training condition (recall, skills, counseling education) as the between-subjects independent variable. No Condition \times Time interaction, $F(4, 78) = 0.40$; main effect of condition, $F(2, 39) = 3.67$; or main effect of time, $F(2, 78) = 2.54$ were observed. These results suggest that dream recall as measured by the dream diaries did not differ among groups and did not change significantly over time.

Changes in attitudes toward dreams. We conducted a similar repeated-measures ANOVA on attitudes toward dreams. No Condition \times Time interaction was observed, $F(4, 78) = 0.45$. In addition, no main effect of condition, $F(2, 39) = .09$, or time, $F(2, 78) = 4.15$, was found. Hence, there were no effects of training on attitudes toward dreams.

Effects of training on outcome of dream interpretation session. A multivariate analysis of variance (MANOVA) conducted on client-reported measures (MIS, SEQ, SIS-U, and Exploration/Insight Gains, Action Gains, and Experiential Gains) for condition (recall, skills, and counseling education) was not significant, $F(6, 33) = 0.92$. A similar MANOVA on therapist-reported measures (MIS, SEQ, and SIS) also was not significant, $F(3, 36) = 0.14$. Hence, no effects of training on client- or therapist-rated session outcome were found. However, applying Cohen's (1988) criteria to examine all possible effect size comparisons yielded three medium effect sizes for client-rated depth (Depth Scale; .68), MIS (.48), and Exploration/Insight Gains (.38) and two small effect sizes for therapist-reported MIS (.25) and client-rated SIS-U (.15), all favoring the skills condition over the recall condition. All other effect size comparisons between the training conditions on the dependent variables (attitudes, recall, and dream interpretation outcome) showed no indication of even a small effect size.

Discussion

There was some indication from the client-rated outcome measures that participants in the skills condition perceived

more gains from the dream interpretation sessions than did participants in the recall-attitudes condition. Although this effect needs replication before we can have confidence in its accuracy, it does provide some preliminary evidence that skills training positively influences session outcome. It makes sense that people benefit from education about the structure of dream interpretation and opportunities to practice specific skills involved in the process. Exposure to these skills may lead volunteer clients to place higher confidence in their ability to benefit from dream interpretation as well as have more realistic expectations about what is involved in the process. Perhaps longer or more individualized training would have yielded larger effects.

The three different types of training (dream recall-attitudes toward dreams, dream interpretation skills, and counseling education) had no significant effects on dream recall or attitudes toward dreams for participants who had below-average levels of dream recall and attitudes toward dreams. Considering past research showing that motivated people are able to increase their dream recall (Botman & Crovitz, 1990; Halliday, 1992; Redfering & Keller, 1974; Reed, 1973, 1978), our results may suggest that an initial interest in and motivation to recall dreams is an important prerequisite to seeing increases in dream recall. Although participants in the dream recall condition reported trying the various suggestions for increasing recall, these efforts seemed to have no additional impact on dream recall compared to simply maintaining the dream diary.

In terms of changing attitudes toward dreams, it may be that our group training approach was not personalized enough to have an impact on attitudes toward dreams. Past research on changing attitudes and persuasion has suggested that it takes a personal, meaningful experience to have an impact on deep-rooted attitudes (Cacioppo & Petty, 1989; Neimeyer, Guy, Metzler, 1989; Petty, Cacioppo, & Heesacker, 1981). Although not assessed in this study, reactions of the participants after the dream interpretation sessions led us to speculate that participants' attitudes may have been changed after having their dreams interpreted. For example, when asked to respond to open-ended questions at the conclusion of the study, participants wrote: "It was incredible how a new light was shed because I became more aware of new things," "[The dream interpretation session] really helped me understand things about myself," "I learned steps to make myself happier again," and "It was an experience I'll never forget."

One of the more surprising findings in the study was that although volunteer clients in the skills condition seemed to gain more from the individual dream interpretation sessions, participants in all of the training conditions seemed to benefit. Specifically, we noted that therapist- and client-reported session outcome scores of volunteer clients were not different from scores reported in other studies for volunteer clients who had not received training. Comparison samples included volunteer clients, all without training, who had a wide range of scores on dream recall and attitudes toward dreams, as well as an additional sample with a similar profile of below-average dream recall and attitudes toward dreams. We made the assumption in designing this

study that a sample of participants with below-average dream recall and attitudes toward dreams would need training to be able to benefit from dream interpretation, yet it appeared that training was not necessary. Most participants became actively engaged in their sessions and found it a useful therapeutic activity.

Several tentative explanations can be provided for why our participants benefited more from the dream interpretation sessions than we originally anticipated. For one, the Hill (1996) model of dream interpretation is structured and facilitates the client's movement through specific, clearly delineated steps. The structure provided in the model may be sufficient for guiding clients through the process without the need for training. This possibility seems consistent with past research that found that clients who engaged in dream interpretation with a trained therapist reported more personal gains and insight than clients who used a self-guided method of dream interpretation (Heaton et al., 1998). Furthermore, therapists may have modified their approach to fit the individual volunteer clients' needs, enabling the participants to feel comfortable with the process. Alternatively, we may have used the wrong selection criteria in determining who actually was in need of training. Rather than using below-average dream recall and attitudes toward dreams, perhaps we should have used the criteria that Cartwright et al. (1980) used in their training study of clients at risk for dropping out of therapy (low scores on the Counselor Readiness Scale and low scores on two scales of an intake rating form: one for the likelihood of remaining in treatment during the first 10 hr and the other for access to feelings and inner life).

Although it is not possible at this point to know precisely why our sample performed better than originally expected, these findings do have practical relevance. Most notably, therapists should not rule out the idea of working with dreams in therapy just because clients say that they do not frequently recall or value dreams. All that is needed to participate in a dream interpretation session is one dream, or even part of a dream. In essence, although it may be helpful to provide suggestions for motivated clients to increase recall (e.g., Halliday, 1992), clients do not need high recall rates to work effectively with dreams. Instead of trying to increase dream recall and improve attitudes toward dreams, it may be more useful to have clients participate in a dream interpretation session that enables them to experience the usefulness of dream work directly. This may ultimately have a positive effect on their attitudes toward dreams, increase recall, and make subsequent dream interpretation sessions even more beneficial.

A limitation of the present study is the small sample size. In addition, two 1-hr training sessions may not have been enough to effect changes in dream recall and deeply held attitudes toward dreams. Other limitations involve the use of research participants instead of actual clients as well as using graduate student therapists. In addition, the use of the dream diary across all conditions presents a potential confound. This diary was intended to be a means of collecting data on the dependent variable of interest, not as an intervention, yet its use could have had possible effects on

dream recall simply by having participants attend to these forms and their dreams on a daily basis.

In considering how to prepare clients to be able to work with their dreams, there are several avenues for future research. First, replication of this study with a larger sample size is needed. Second, future investigators might also want to try other types of training interventions for dream interpretation. One possibility is to show a videotape of an actual dream interpretation session to provide modeling of dream interpretation skills and help shape expectations. Another option is to do more individualized training, perhaps by having clients participate in one session and give them feedback about their specific skills. For example, if a participant had trouble associating, specific training could be given to help with this particular skill. Certainly it seems worthwhile to pursue various options of training to see if we can change attitudes toward dreams and increase clients' willingness to use and ultimately benefit from dream interpretation.

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