The Use of Group Music Therapy as a Treatment for Musical Performance Stress

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Abstract—By comparison with high-anxiety freelance musicians merely waiting for treatment or receiving attention minus therapy, similar musicians receiving group music therapy responded with an improved self-image and sense of competence as well as with a reduction in anxiety related to performance. Their musicianship, as judged by others, also improved relative to their untreated colleagues. Nevertheless, in these small samples it was found that group music therapy was ineffective for musicians scoring high on narcissism, suggesting that this therapy should not be employed until narcissistic defenses have been resolved. *Med Probl Perform Art* 5:49–57, 1990.

Because the high incidence of performance stress is physiologically, psychologically, and artistically debilitating to professional musicians,[1–3] there is a great need for appropriate interventions that will effectively treat stress in the therapy situation and produce gains that transfer maximally to real life. The major focus of this study was to introduce and assess the use of group music therapy as a treatment for the fear/anxiety component of musical performance stress and to develop an objective procedure for this assessment. Group music therapy, as used in this study, focused on the here-and-now experience of the individual, using musical improvisation, performance, awareness techniques, and verbal processing as catalysts for communication, change, and personality integration. The therapy was influenced by Hesser's[4] music therapy group training model for music therapy students.

In time course and design, the therapy consisted of 12 weekly 1½ hour sessions, each of which was structured into four components: (1) a warm-up, which included relaxation and breath exercises, followed by (2) an unstructured group musical improvisation; (3) verbal, free association of individuals to the group improvisation, leading to (4) individual and/or group music therapy interventions. These interventions included clinically guided music improvisation techniques—role playing, instrumental and vocal self-statements, "reality rehearsal" performances, and guided imagery exercises—to express, explore, and treat emotional problems.

The primary goal of the group music therapy intervention was to help anxious musicians to focus on their actual process of music making—how the body, mind, and emotions interact during musical preparation and performance. In this way, the musicians could become aware of and understand the underlying dynamics of their anxiety. Further, through combining the practice of "inner listening"[5]—an integral component of most music therapy techniques—with the informal use of cognitive restructuring and desensitization, the musicians were able systematically to bring unconscious repressed material related to their early performance experiences into consciousness. Through the *process* of music therapy, the musicians were then encouraged to use their own music, as a symbol of their creative life urge, to transform the feelings underlying their anxiety into meaningful expressions of self. According to May,[6] the areas of the personality marked by anxiety often become areas of significant growth when the individual deals with anxiety constructively. Finally, by applying therapy in a music performance context, it was hoped that reductions in anxiety achieved would transfer maximally to actual performance situations.

To evaluate the validity of the group music therapy intervention as a treatment for musical performance stress,

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musicians were enlisted in the study who reported debilitating anxiety during performance and also exhibited high indices of anxiety on various standardized and validated self-assessment questionnaires. These musicians were split into a therapy (experimental) group, for which therapy commenced immediately, and a wait-listed (control) group, for which therapy was delayed until the first group completed therapy. In the meantime, the wait-listed group served as a control for the possibility that any improvement in the therapy group was related to the passage of time or to therapeutic effects of hope engendered by merely enrolling in the study.

Prior to and at the end of the 12-week period, both the therapy and wait-listed groups were assessed by questionnaires for level of anxiety and related states. In the intervening sessions, the therapy group received additional assessments to trace the "effectiveness" evolution of the treatment. On the second, sixth, and twelfth sessions, the musicians of the therapy group were asked to perform a preassigned musical example, the purpose being to provide the occasion for real-life performance anxiety against which to assess the effectiveness of treatment up to that point, and to expose, for therapeutic purposes, deeper levels of the dynamics from which the anxiety sprang.

To determine the effect of group music therapy in treating performance anxiety, the following hypotheses were tested. Subjects in the therapy group, when compared either with themselves or with those in the wait-listed group, would, after treatment intervention: (1) become significantly more confident as performers as measured by their responses on the Personal Report of Confidence as a Performer (PRCP) Scale;[7] (2) show significantly less anxiety as measured by the Spielberger Trait (STAI) and the Spielberger State (SSAI) Anxiety Inventories;[8] and (3) become significantly more optimistic and free to create as judged by their choices on the 23-item bipolar Adjective Checklist[9] on which are reported here-and-now feeling states. The PRCP measures specific anxiety responses during solo performance. The STAI and SSAI are highly reliable indicators, respectively, of differences among individuals in anxiety-proneness, and of anxiety difference within the individual from situation to situation.

EXPERIMENT ONE

Method

Subjects. Twenty freelance musicians ranging in age from 18–48 years (M = 28) were selected from 27 who responded to a flyer calling for volunteer participants in a study of the efficacy of group music therapy as a treatment for overly anxious professional musicians. The flyer was distributed to several music conservatories in the New York City metropolitan area. The criterion for selection of subjects was a score of at least 12 (which represents a moderate level of anxiety) on the PRCP. Subjects were randomly assigned to the therapy (experimental) group (n = 10 initially but reduced to 7 by subsequent dropouts) and the wait-listed (control) group (n = 10). The therapy group consisted of 4 females and 3 males (1 opera singer, and 4 classical, 1 rock, and 1 jazz instrumentalists) with 2–19 years of professional performance experience (M = 8, SD = 7.9) and 4–12 years of formal musical training (M = 10, SD = 2.24). The wait-listed group consisted of 5 females and 5 males (1 opera singer, 3 singer/pop songwriters, and 3 classical, 2 rock and 1 jazz instrumentalists), with 3–21 years of professional performance experience (M = 9.0, SD = 8.0) and 2–15 years of formal musical training (M = 10.0, SD = 4.1).

Apparatus. Music group therapy was conducted in a large performance classroom at New York University. Subjects had access to a grand piano, an assortment of instruments for improvisation (including drums, cymbals, xylophones, bells, and a set of Paiste gongs), and the subjects' primary instruments.

Therapists. The music therapy group was co-led by two female certified music therapists with 12 and 4 years of clinical experience.

Regimens, Interventions, and Measures. See the introductory paragraphs at the beginning of this article.

Written Test Schedules. Before and after the 12-week treatment period, the PRCP and STAI were administered to subjects in both groups. Before and at the end of each weekly session, subjects in the therapy group received the Adjective Checklist and the SSAI.

Performance Test Schedules, Procedures, and Rationales. At the end of the first treatment session, each of the therapy subjects was asked to learn Stephen Foster's *Slumber Song* and to prepare a performance of it for the entire group and outside audience members on the following week (session two), at therapy mid-point (session six), and at the final (twelfth) session. The piece was chosen for its simplicity, beauty, and potential to evoke deep feelings.

The performance test primed performance anxiety for both diagnostic and therapeutic purposes. During and in the wake of the test, qualitative information was gathered regarding the subjects' "lived" experience of the musical performance, including being in a "test" situation, and its effect on attitudes toward preparation and interpretation, and upon musicianship, body/mind integration while performing, communicative ability, creativity, and coping skills. This qualitative information was used to better understand and assess the SSAI and Adjective Checklist results regarding changes in the subjects' state anxiety from before to after each performance, and from one performance session to the next.

Results

Pre- and Post-treatment Period. Two one-way between-group analyses of covariance were performed on therapy and wait-listed subjects' PRCP and STAI test measures before and after the 12-week treatment period. Means and standard deviations appear in Table 1.

As compared with the wait-listed subjects, therapy subjects over the 12-week treatment period experienced both

TABLE 1. Personality Measures (Study 1): Means and Standard Error of the Means

Measure	Therapy Group (n= 7)		Wait-listed Group (n= 10)	
	M	*SEM*	*M*	*SEM*
PRCP				
Pre-treatment	15.43	1.36	16.10	1.47
Post-treatment	6.00	1.50	14.50	0.74
Pre-to-post difference	9.43	2.31	1.60	1.37
STAI				
Pre-treatment	47.43	3.75	47.70	3.21
Post-treatment	41.43	4.10	48.30	3.04
Pre-to-post difference	6.00	2.81	−0.60	1.73

M = mean; SEM = standard error of the mean. PRCP = Personal Report of Confidence as a Performer Scale (Appel, 1976); a score of 25 represents the least confidence, whereas 1 represents the most confidence. STAI = Spielberger Trait Anxiety Inventory (1977); the mean for normal working adults is 36, so that higher scores signify greater than normal anxiety.

a significant increase in their confidence as performers, as measured on the PRCP scale ($F[1,13] = 10.8$, $P < .009$), and a significant decrease in their trait anxiety, as measured by the STAI ($F[1,13] = 7.4$, $P < .013$). The PRCP and STAI results both support the hypotheses that group music therapy intervention is more effective than time alone in increasing performers' confidence and lowering their individual proclivities to experience anxiety.

Weekly Test Results. An inspection of the weekly test results can illuminate the course by which the differences arose between the therapy and wait-listed subjects by the end of the 12-week course of treatment.

Figure 1 portrays, across sessions, the mean "before-session" and "after-session" state anxiety levels registered by the therapy group. Session 1 is not shown because the SSAI was not administered then. In addition, sessions 4, 7, 9, and 10 do not appear in the figure because not all subjects were in attendance. Figure 1 shows that the state anxiety registered by the participants in the group music therapy in the beginning of each session at first increased over sessions but then declined. This inverted U-shaped function proved to be statistically significant ($F[1,40] = 6.01$; $P < .025$).

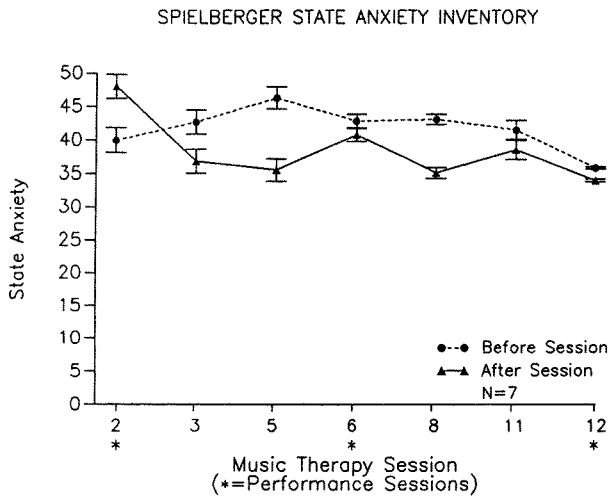

FIGURE 1. Session-by-session mean performances of the Experiment One treatment (therapy) group on the Spielberger State Anxiety Inventory (SSAI). No SSAI was administered on session 1. The data for sessions 4, 7, 9, and 10 are not shown, because not all 7 subjects in the group were in attendance on those sessions. Brackets about each "mean" point indicate the ± standard error of the mean.

After each session was over, except for session 2, the state anxiety registered by the music therapy participants always dropped. This reduction was statistically significant for sessions 5, 8, and 12 (respectively, $t[6]$'s = 3.25, $P < .025$; 5.13, $P < .005$; and 4.60, $P < .005$). However, the reduction was not as great (or there was an increase) after occasions designed to activate real-life anxiety by requiring the participants to perform (sessions 2, 6, and 12). As therapy proceeded, the contrast between performance sessions and surrounding sessions with respect to before-to-after differences in anxiety became progressively less marked ($F[1,13] = 11.31$, $P = .005$), as is evident in Figure 1. This was primarily due to the fact the level of state anxiety persisting after a performance, while initially quite high on session 2, showed a linear decline through sessions 6 and 12 ($F[1,13] = 12.515$, $P < .005$). By session 12 of music therapy, the before-session state anxiety level was also in decline.

The Adjective Check List responses from before and after each session were entered into a principal components factor analysis and the results were rotated to help interpret components. Five components emerged from the analysis, and combined accounted for 71.8% of the variance. In decreasing order of magnitude, these factors were termed successfulness, relatedness, task orientation, emotionality, and tenderness. Of these, successfulness accounted for 40.6% of the variance, the next largest accounting for only 14.5%.

Feelings about successfulness-unsuccessfulness within the music therapy session were most saliently tapped by the Adjective Check List. Within the successfulness factor, the winner–loser scale was the item from the Adjective Check List loading highest (.81558), the next being the self-confident–anxious scale (.75359), followed by the effective–ineffective (.44538) and powerful–weak (.29120) scales.

To examine how the participants in the music therapy group changed their most pertinent feelings over the course of treatment, their session-by-session responses on the winner–loser item of the successfulness factor were selected for study.

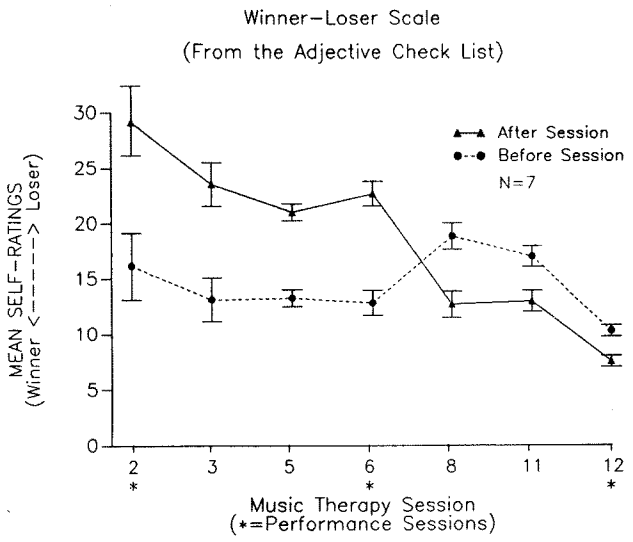

FIGURE 2. Session-by-session mean performances of the Experiment One treatment (therapy) group on the winner–loser (WL) scale from the Adjective Check List. The winner–loser scale was not administered on session 1. The data for sessions 4, 7, 9, and 10 are not shown, because not all 7 subjects in the group were in attendance on those sessions. Brackets about each "mean" point indicate the ± standard error of the mean.

The winner–loser (WL) results are shown in Figure 2. Self-ratings on the WL scale taken at the *beginning* of each session changed little throughout the 12-week course of treatment ($F[6,36] = 0.877$; P = NS). However, the ratings of the WL scale taken *after* each session showed a statistically significant decline in magnitude over the 12 sessions, so that in terms of after-session measures, the music therapy participants viewed themselves progressively less as losers and more as winners as treatment proceeded ($F[1,40] = 23.507$; $P < .001$).

From session 2 through 6, the music therapy participants rated themselves as feeling less like winners after each session than before, whereas from session 8 to the end, they rated themselves as feeling more like winners after each session than before. These differences between the before-session and after-session WL ratings were statistically significant on sessions 3, 5, 6, 8, and 12 (t[6]'s, respectively, $= -2.62$, $P < .05$; -5.01, $P < .005$; -4.58, $P < .01$; $+2.58$, $P < .05$; $+2.73$, $P < .05$). Moreover, the crossover interaction between the before-session and after-session WL ratings across sessions was highly significant ($F[6,36] = 7.278$; $P < .001$), largely arising between sessions 6 and 8.

The points in the decline of the after-session WL ratings at which there are changes in direction coincide with the same points in the after-session SSAI ratings (compare with Fig. 1) at which there are changes in direction. In particular, the peaks in loser ratings that occurred on the first and second performance sessions, and that were then followed on the third performance by the lowest loser rating, conform to a similar pattern of high peaks in state anxiety, followed on the third performance sessions by the lowest anxiety rating. Again, *performance* sessions seem to afford the most sensitive look at the effects of stress and the course of music therapy. Accordingly, these performance sessions are briefly examined in terms of the qualitative data gathered.

Qualitative Results of Performance Test. *First performance (second session).* Subjects were extremely self-involved prior to, during, and after performance. Most had not prepared the piece adequately and were concerned only about "getting through it." One subject reported experiencing heart palpitations due to nervousness and had to postpone her performance until the following week. All subjects criticized their performances harshly, a behavior in keeping with the increase in state anxiety from before to after the session reported for the group.

Second performance (sixth session). The subjects were still extremely anxious about performing before an audience, although they all seemed to know the piece better. Most subjects expressed difficulty in connecting with the emotional content of the piece. One subject shared that she liked the piece because it represented feelings of being supported and nurtured, but she was unable to accept these feelings in herself and thus could not communicate them through the music. During this performance test, specific problem areas emerged for each subject that became the therapeutic focus for subsequent sessions.

Final performance (twelfth session). During the performance test, subjects reported feeling more confident, took greater liberties in interpreting the piece, made eye contact with and attempted to communicate the music to the audience. Several subjects reported feeling a more intimate connection with other group members and with the audience during this performance.

Discussion

Although the study contained a small number of subjects, Experiment One showed the following:

1. Musicians receiving group music therapy exhibited a significant reduction in trait anxiety (STAI) and an improvement in confidence as performers (PRCP) at the end of treatment as compared with the beginning, whereas those merely waiting to receive therapy did not.
2. An examination of what aspects of therapy in the intervening time were associated with this improvement disclosed, surprisingly, that state anxiety of therapy participants, as measured at the beginning of each session, rose gradually to a peak by session 5 and then gradually declined. This finding suggested rising discomforts as defenses against anxiety were challenged in the initial phases of therapy and, then, a resolution of the anxieties that these defenses were employed to mask.
3. After each session was over, except for the second, state anxiety abated, as one might expect.
4. It was a mark of the efficacy of the therapy that the higher anxieties aroused on the sessions requiring that each participant perform lingered progressively less and less at the end of those sessions as treatment progressed.

5. State anxiety findings were backed by those from the Adjective Check List, which showed that the feelings most saliently sampled by the List were those related to successfulness–unsuccessfulness—specifically, the sense of being a winner or a loser.

6. In accord with the evidence for a breakdown in the defenses against anxiety, as shown by the rising portion of the before-session state anxiety curve measured over sessions, the participants felt more like losers at the end of each session than at the beginning, through session 6.

7. From session 8 to 12, and congruent with the declining portion of the before-session state anxiety curve, the participants felt more like winners at the end of each session.

8. The most marked evidence of winner–loser feelings and the positive changes in these feelings that occurred during the course of treatment took place on the performance sessions.

9. In that the performance sessions were designed to approximate the anxiety situations of real life, the therapeutic changes that occurred from the first to the last of these are the best evidence for the effectiveness of the therapy and suggest that the participants would be able to transfer the improvements garnered in the therapy to real-life situations.

10. The qualitative data obtained over the course of the performance sessions suggest that an important manifestation of the problems evidenced by the performers initially was extreme self-involvement, which acted as an inappropriate defense against the underlying issues bringing them into therapy. By the last performance (session 12), self-involvement had been transformed into a productive and creative involvement with their music.

EXPERIMENT TWO

According to Experiment One, group music therapy intervention can help stressed freelance musicians who volunteer for treatment to feel less anxious and more confident as performers. Again through the use of group music therapy intervention, Experiment Two sought to verify this finding by replicating the use of the STAI and PRCP as in Experiment One, but in conjunction with an added "attentional" control (see below). It further sought to ascertain whether—as one would hope for these musicians and their audiences—an improvement in their actual performances, as perceived by others, accompanies therapy-produced reductions in anxiety and increases in performance confidence. Finally, according to clinical impressions in Experiment One, extreme self-involvement may be a complicating factor in performance stress syndrome and its treatment. Therefore, Experiment Two also examined both the effect of treatment on the therapy participants' self-involvement, as measured by the Narcissistic Personality Inventory (NPI),[10] and the relationship between their self-involvement, so measured, and their responsiveness to treatment as measured in other ways.

Method

The therapy session schedule, intervention, apparatus, and therapists were the same as those used in Experiment One, as was the administration of the STAI and the PRCP personality measures to all groups on the first and last session. Similarly administered was the newly added 54-item forced-choice Narcissistic Personality Inventory (NPI) questionnaire. However, the SSAI and the Adjective Check List used in Experiment One were omitted.

Selection of Sample and Formation of Experimental and Control Groups. The therapy (experimental) subjects consisted of the wait-listed subjects of Experiment One who had been promised treatment at the completion of that study, plus 2 new subjects (see below). Initially 12 in membership, the experimental group was reduced to 8 by dropouts during the course of therapy.

Additional subjects were needed to participate in the other control groups. Thirty freelance musicians responded to an ad in the musicians' union monthly newspaper (placed 2 months prior to the first music therapy session) announcing the study and calling for volunteers. Twenty-two met the participation criteria, which were identical to those in Experiment One.

The subjects were randomly assigned to either a wait-listed or an attentional control group. The wait-listed control group ($n = 10$) was included for the same reasons as in Experiment One, and consisted of 6 females and 4 males with 3–15 years of professional performance experience ($M = 7$, $SD = 5.3$) and 5–14 years of formal musical training ($M = 9$, $SD = 3.0$).

The newly added attentional group ($n = 10$ initially but reduced to 6 by subsequent dropouts) controlled for the Hawthorne effect, namely that subjects often improve in experiments without receiving the experimental treatment simply from the awareness that they are participating in an experiment and receiving special attention for it.[11] This group, as finally constituted, consisted of 3 females and 3 males with 6–16 years of professional performance experience ($M = 10$, $SD = 3.4$) and 8–15 years of formal musical training ($M = 10$, $SD = 3.3$).

The attentional control group represented systematic intervention and interaction on the part of one of the therapists that was not related to the treatment or intervention variables being evaluated. The subjects of this group met with the therapist weekly to complete a battery of psychological tests and to discuss musical topics. Both groups of control subjects were promised treatment at a later date.

Performance Rating Procedures. To determine whether, in comparison to attentional control subjects, treatment would render experimental subjects significantly more musical (aesthetically pleasing and technically proficient) in performance, and at the same time less self-involved and stressed, both experimental and attentional subjects were asked to prepare a piece (5–10 minutes in length) to share with their respective group members and other interested listeners during the second session (week) of the study.

Similarly, another piece was prepared for performance on the last session.

Videotapes of these performances were independently rated both by a psychologist, who was also an amateur musician, and a professional musician on scales for observable signs of performance musicality (PM), performance stress symptoms (PSS), and performance self-involvement (PSI). The PM, PSS, and PSI video-rating scales were developed using a model by Fiske,[12] and in pilot testing were found to be highly reliable prior to their use in this study. The two performances of each individual were presented in counterbalanced order of occurrence to the raters, who were blind as to performance order, the group membership of the individual, and the nature of the study.

Results

Group Comparability. To ensure that possible post-intervention results did not result from either pre-intervention differences in groups or some selective factors governing who dropped out of the study, pre-intervention comparisons were made of (1) all groups (treatment, wait-listed, and attentional), and (2) those who remained in the study and those who did not. One-way between-group analyses of variance yielded no significant pre-intervention differences in these comparisons (all P's > .35) either in terms of personality measures or of scores on the video-rating scales.

Observer-rated Video Measures of PM, PSS, PSI. *Reliabilities.* Inter-rater reliabilities computed for the observer-judged videotape outcome measures of musicality (PM), stress symptoms (PSS), and self-involvement (PSI) yielded correlations, respectively, of .99, .99, and .96, indicating that the two raters agreed almost perfectly on all variables.

Pre- and Post-treatment Period. The results of the pre-treatment and post-treatment measures of the video-rating scales for the treatment group and the attentional group are shown in Table 2. In order to assess the effect of music therapy intervention, the differences between pre-treatment and post-treatment measures for the treatment group and the attentional group were compared. Three between-group analyses of covariance of the post-test measures were performed, using the pre-test measures as covariates.

At treatment termination, the therapy participants were found to be significantly more musical ($F[1,12] = 30.7$, $P < .001$), less stressed ($F[1,12] = 52.7$, $P < .001$) and less self-involved ($F[1,12] = 46.7$, $P < .001$) during performance compared with the attentional control subjects. The above results all had associated effect sizes[13] that were greater than .74, an outcome that is particularly impressive given the small number of subjects in the study and that, according to Cohen, a large effect size in social science research is on the order of .14.

Personality Test Measures. Table 3 shows the mean PRCP and STAI pre-treatment and post-treatment scores and pre-post differences for all three groups. To evaluate the effects of music therapy on these scores, two between-group analyses of covariance comparing the three groups were performed, using pre-treatment measures as covariates.

On the PRCP scale, the participants in the music therapy group became significantly more confident as performers compared with both the attentional ($F[1,21] = 29.94$, $P < .001$) and the wait-listed ($F[1,21] = 14.54$, $P < .001$) control subjects. These controls, however, did not differ from each other ($F[1,21] = 2.91$, $P = .403$). Between the experimental and both control groups, the associated effect sizes were both greater than .42.

On the STAI, there were no significant differences in trait anxiety among the three groups. There was a slight decrease in the STAI scores of the therapy group after treatment, but this did not reach significance.

To evaluate the effect of music therapy on subjects' NPI scores, the normal personality mean value of 20.8 (healthy self-esteem) was subtracted from each subject's pre-treatment and post-treatment NPI score. The sign of the resulting difference scores (which, if plus, identified the scorer

TABLE 2. **Video Outcome Measures (Study 2): Means and Standard Error of the Means**

	Therapy Group (n=8)		*Attentional Group (n=6)*		
Measure	*M*	*SEM*	*M*	*SEM*	*Effect size*
PM					
Pre-treatment	31.9	2.47	33.8	2.12	
Post-treatment	19.5	1.84	32.5	2.49	
Pre-post difference	12.4	2.10	1.3	1.76	.74
PSS					
Pre-treatment	19.6	2.02	20.0	2.04	
Post-treatment	9.6	0.95	21.0	2.94	
Pre-post difference	10.0	1.24	−1.0	0.98	.83
PSI					
Pre-treatment	20.4	2.02	22.7	2.94	
Post-treatment	9.0	1.10	22.7	2.94	
Pre-post difference	11.4	1.58	0	1.31	.81

M = mean; SEM = standard error of the mean. PM = Performance Musicality Scale. PSS = Performance Stress Symptoms Scale. PSI = Performance Self-involvement Scale. Effect sizes calibrating the magnitude of change from pre-treatment to post-treatment were calculated using Cohen's (1988) statistical power analysis.

TABLE 3. **Personality Measures (Study 2): Means and Standard Error of the Means**

	Groups					
	Therapy (n = 8)		*Attentional (n = 6)*		*Wait-listed (n = 10)*	
Measures	*M*	*SEM*	*M*	*SEM*	*M*	*SEM*
PRCP						
Pre-treatment	14.5	0.78	14.8	0.95	16.5	0.69
Post-treatment	8.8	0.75	13.3	0.61	15.9	0.84
Pre-post difference	5.7	0.56	1.5	0.72	0.6	0.43
STAI						
Pre-treatment	48.5	3.22	49.3	3.49	50.4	2.09
Post-treatment	47.4	1.66	47.7	2.67	49.9	2.26
Pre-post difference	1.1	1.84	1.6	0.84	0.5	0.27

M = mean; SEM = standard error of the mean. PRCP = Personal Report of Confidence as a Performer Scale (Appel, 1976); a score of 25 represents the least confidence, whereas 1 represents the most confidence. STAI = Spielberger Trait Anxiety Inventory (1977); the mean for normal working adults is 36, so that higher scores signify greater than normal anxiety.

as veering toward a pathologically inflated self-esteem or, if minus, toward a pathologically low self-esteem) was then ignored, being what is termed an "absolute difference score." The change in these absolute differences from pre-treatment to post-treatment administration of the NPI was then calculated for every subject in every group, and a one-way analysis of variance was done to determine if the three groups differed significantly in their change scores. The statistical procedure employed was the Scheffe test,[14] which is used to make multiple comparisons.

The results showed that, compared with scores of the attentional group, scores of subjects in the therapy group moved significantly ($P < .05$) toward healthy normalcy. In other words, subjects with initially higher-than-normal NPI scores exhibited *reduced* scores and subjects with initially lower-than-normal NPI scores exhibited *increased* scores after group music therapy intervention. The results of the comparison with the wait-listed group was not significant. The mean change in NPI toward normalcy was 2.63 for the therapy group, −0.60 for the attentional group, and 0.67 for the wait-listed group. The associated effect size, calculated using the Cohen power analysis, was .16.

Individual Trait Differences as Indicators of "Therapability." To determine how subjects' *initial* personality characteristics were associated with subsequent changes resulting from music therapy intervention, subjects' PRCP change scores were examined as a function of their initial STAI and NPI scores. It was observed that subjects who initially had the *highest* trait anxiety and the *lowest* narcissism scores were the ones who over the course of therapy experienced the greatest improvement in confidence as performers. This observation was confirmed by a linear discriminant function analysis showing, more generally, that high and low changers on any of the personality measures employed can be discriminated from each other in terms of their performance on the NPI and the STAI, with low NPI being a better predictor of favorable change than high STAI.

Likewise, in studying the relationship between subjects' initial characteristics and their subsequent change in video-rated measures, it was again found through discriminant analysis that the variable that predicts changes in subjects' self-involvement and stress symptoms was the NPI score. Subjects with high NPI scores, the only significant predictor, improved the least during therapy according to their self-involvement and stress symptom ratings. Discriminant analysis predicted 87.5% of the cases accurately.

On the other hand, musicality could be predicted more accurately using initial PRCP and STAI scores—again in 87.5% of the cases. Both types of scores were significant predictors. Subjects who became more musical as a result of the music therapy intervention were the ones who had higher PRCP scores (lower confidence in themselves as performers) and moderate trait anxiety (STAI) to begin with.

To determine if *changes* in personality were associated with the changes in PRCP scores, the correlations of all change score measures were examined. A significant positive correlation existed between the PRCP and STAI change scores ($r[6] = .86$, $P = .003$) to the effect that small decreases in anxiety were linked with large increases in confidence as a performer. Even though the changes in trait anxiety occurring over the course of music therapy were not themselves significant, they were, nevertheless, significantly associated with changes in confidence as a performer. Finally, there were small nonsignificant positive correlations of the NPI change scores with the PRCP and the STAI change scores, suggesting that a movement toward normalcy in narcissism could be partially responsible for a decrease in the subjects' trait anxiety and an increase in their confidence as performers.

Discussion

Although the sample size was also small in Experiment Two, the results suggest that group music therapy is effective not only in reducing musical performance anxiety, as indicated by the significant change in PRCP and NPI scores and the observer-rated PSS and PSI video measures, but also in increasing musicality, as indicated by the PM video ratings. Despite the small sample size, these results appear to be reliable, given the absolute magnitude of the effect sizes associated with music therapy intervention. The case

to be made for the efficacy of music therapy intervention is also strengthened by the replication of the PRCP findings of Experiment One. However, contrary to the results of Experiment One, the STAI changes experienced by the therapy participants in Experiment Two were small and nonsignificant, although they did move in the same direction as in the first experiment. Nevertheless, the significant relationship between decreases in state anxiety and increases in performer confidence indicated that changes in STAI in Experiment Two, as in Experiment One, were importantly involved in the favorable outcome of group music therapy intervention.

When compared with the lack of change exhibited by the control groups, it is evident that the therapy-associated increases in musicality and confidence as a performer, and decreases in narcissism and in self-involvement and stress during performance were not just results of the passage of time or of the attention and support received by subjects from therapists and peers in the group context. Instead, these salutary effects appear to result specifically from group music therapy intervention.

Without further research, it is impossible to specify which of the many aspects of multi-modal music therapy intervention are principally responsible for the efficacious results of Experiments One and Two. But it is still possible to make some tentative inferences as to how this intervention did or did not produce a favorable outcome.

In Experiment One, it was found that increases in anxiety and the sense of being a loser in the first half of the course of therapy preceded the therapeutic effects of intervention. This finding is commensurate with the notion that improvement cannot proceed until the inappropriate defenses against coming to grips with problems blocking a genuine rapprochement with the music to be expressed are broken down. In this context, the most important contribution of Experiment Two is the finding that high initial loadings on narcissism and performance self-involvement in the personalities of the therapy participants predicted accurately that the breakdown in defenses against anxiety necessary for effective therapy would not occur. In fact, participants with initially high trait anxiety and low narcissism scores later experienced the greatest improvement in confidence as performers and reductions in performance self-involvement and stress. Participants whose lack of inappropriate defenses allowed them initially to feel anxiety and a sense of inadequacy as performers later showed significant improvement in musicality. The data suggest that it is principally through changes in narcissism toward normalcy that improvements produced by group music therapy are mediated. It appears that, if narcissism is too severe, the music therapy will not prove effective. From this it follows that screening of applicants for music therapy may be important to identify those who may not profit from it until problems such as excess narcissism are first resolved.

The following clinical impressions gleaned by the therapists during the course of their session-to-session contacts with the participants are important in more fully understanding how group music therapy was effective in treating musical performance anxiety. During the course of therapy, it was found in both studies that the participants had experienced music-related traumas early in life that had resulted in unresolved conflicts around personal and musical identity, relationships with significant others, self-esteem, self-expression, and creativity. These unresolved conflicts seemed to be the root causes of performance anxiety in this particular group of musicians. However, because of their extreme self-involvement, which was actually a mechanism for denial and dissociation of the feelings related to these conflicts, the musicians, prior to their participation in music therapy group, were unable to confront the underlying dynamics of their anxiety. During the course of therapy, the musicians who did not score extremely high on the NPI gradually "let down their guard" against the undesirable feeling states associated with their inner conflicts and became more accepting and less judgmental. They were than able to use their own music to transform their feelings associated with these conflicts into meaningful expressions of self. This helped them to be more wholly in touch with themselves and with the expressive capacity of their music, which may be responsible for their significant increase in musicality after the music therapy intervention.

SUMMARY

Because the literature indicates that performance anxiety is prevalent in the musical community, the authors suggest that group music therapy intervention be employed as a *preventive* measure in institutions that train musicians. In this way, aspiring musicians can develop more positive and therapeutic associations with their own music and with the audience, learn how to deal creatively with the normal stresses of musical performance, and become more aware of self and others in a supportive "playful" group environment.

The data from these two studies suggest that group music therapy proved effective in improving the participating musicians' self-image and sense of competence, and, to some extent, in reducing their anxieties related to performance. At least as important, the studies show that music therapy had a favorable effect on the musicians' own musicality. Further, the second study suggests that group music therapy may be inappropriate for musicians with particularly high loadings on narcissism and should not be employed until narcissistic defenses have been resolved. Finally, follow-up work is necessary to replicate these findings and to determine whether, as seems likely, the benefits of coping with performance stress that music therapy offers musicians does, in fact, transfer from the therapy situation to real life in ways that have a lasting value.

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