

The effects of group improvisational music therapy on depression in adolescents and adults with substance abuse: a randomized controlled trial**

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The effect of group improvisational music therapy on depression in adolescents and adults with substance abuse was investigated. It was hypothesized that group improvisational music therapy would relieve depressive symptoms. Twenty-four Spanish-speaking patients receiving treatment for substance abuse at *Fundación José Félix Ribas* (FJFR) in Mérida-Venezuela participated in the study. Participants completed the Beck Depression Inventory (BDI) and the Hamilton Rating Scale for Depression (HRSD) before being randomly assigned to experimental or control groups, each consisting of three cohort groups recruited over a nine-month period. The experimental group received 12 group improvisation sessions over a three-month period, along with the standard treatment program provided at the facility, and the control group received only the standard treatment program. Post-test measures were completed at the end of each three-month treatment cycle. Differences between the groups (pre-test–post-test scores) were calculated (Mann–Whitney *U* Test). Results showed that both groups were equally matched on all pre-test measures. As for post-test measures, significant differences were found between the groups on HRSD but not the BDI. The experimental group was significantly less depressed after treatment than the control group, as measured by the HRSD. Improvisational music therapy led to statistically significant greater improvements in psychologist-rated depression (HRSD) when compared with the regular treatment program alone; improvisational music therapy had a clinically significant effect. Among limitations of the study were: a small sample size and the absence of a depression assessment tool for substance abuse.

Keywords: improvisational music therapy; depression; substance abuse

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Introduction

Purpose of the study

The purpose of this study was to determine the effectiveness of improvisational music therapy in relieving symptoms of depression in adolescents and adults with substance abuse.

Statement of the problem

The main question in this study is: does improvisational music therapy have any significant effect on the depressive symptoms of individuals with depression and substance abuse? The two sub-problems are: (1) does improvisational music therapy decrease self-rated depression in depressed adolescents and adults with substance abuse? (2) Does improvisational music therapy decrease psychologist-rated depression in depressed adolescents and adults with substance abuse? Two hypotheses were tested: (1) depressed individuals with substance abuse who receive improvisational music therapy in addition to the standard treatment program (experimental group) will demonstrate significantly lower self-rated depression scores, when compared with the control group, who receives only the standard treatment program; and (2) depressed individuals with substance abuse who receive improvisational music therapy in addition to the standard treatment program (experimental group) will demonstrate significantly lower psychologist-rated depression scores, when compared with the control group, which receives only the standard treatment program.

Definitions

Improvisational music therapy is defined as a method that employs improvising as a primary therapeutic experience (Bruscia, 1987). Improvising is the extemporaneous process of inventing music while playing or singing, using whatever sound sources are available in a given therapeutic situation to obtain an art product (Alborno, 2002).

According to the *Diagnostic and statistical manual of mental disorders* (American Psychiatric Association, 1994) depression includes: (1) loss of motivation and energy; (2) difficulty sleeping or oversleeping; (3) physical slowing or agitation; (4) change in appetite or weight; (5) feelings of worthlessness or inappropriate guilt; (6) difficulty thinking or concentrating; and (7) recurrent thoughts of death or suicide.

Substance abuse is a term frequently used to describe the way an individual uses a broad range of substances that fit the addictive profile. It is defined as the “continuing, compulsive nature of the drug use despite physical and/or psychological harm to the user and society and includes both licit and illicit drugs” (Addictive disorder, 2006). Adolescence is the

period between nine and 20 years of age; it is considered a sensitive transition stage where drug abuse is initiated (Comisión Nacional Contra el Uso Ilícito de Drogas [CONACUID], 2003).

Significance of the study

The comorbidity of depression and substance abuse is a relatively new challenge and an important one because it greatly affects society's youngest people. Merikangas and Stevens (1998) found that 20 to 40% of individuals with mood disorders in the United States abuse substances, a factor they considered "to worsen depressive symptoms" (p. 2). Also, they assert that individuals with two disorders are more impaired and at higher risk of suicide than individuals with substance abuse as a sole diagnosis. Depression has not only been found to be associated with substance abuse, but also with other psychiatric diagnoses (Deykin, Levy, & Wells, 1987). This comorbidity makes treatment of depression in persons with substance abuse difficult to carry out; moreover, there is still considerable debate over what is the most effective approach in substance abuse. In addition, there are relatively few well-designed studies regarding the treatment of this comorbidity (Fabiani, 2004).

The present study is an attempt to address this need for further research. More specifically, the present study aims at discovering the extent to which improvisational music therapy will be effective in treating the depression that often accompanies substance abuse. Of particular concern is whether improvisational music therapy can add significantly to the efficacy of existing approaches to treatment. This is important because improvisational music therapy is an economical and low-risk strategy for treating depression in substance abuse, with no known side effects.

An overview of the literature

The overview of recent literature surveyed the comparative use of receptive and active methods of music therapy, specifically improvisation. Studies with adults concerning music therapy and depression dealt with receptive music therapy (which involves listening to music), and active music therapy (which involves making music) but only two dealt with improvisation. The studies dealing with receptive music therapy were primarily experimental in design and concluded that listening to music was effective in reducing depressive symptoms by providing relaxation and mood changes in various affected populations (Ashida, 2000; Brotons & Marti, 2003; Hendricks, 2001; Hsu & Lai, 2004; Siedlecki, 2005). One descriptive study dealt with emotional expression and depression (Clements-Cortes, 2004). Those studies dealing with active music therapy considered song-writing, singing, music games, and improvisation useful to help decrease and monitor depressive

symptoms (Kenny & Faunce, 2004; Mishne, 2001; Schmid & Aldridge, 2004). The research literature on depression and music improvisation is limited and studies on this regard showed that music improvisation enhanced mood and general sense of well-being in patients experiencing depression (Bittman et al., 2001; Schmid & Aldridge, 2004). A meta-analysis study gave evidence of the positive effects of music therapy to improve mood in depressed individuals when compared with standard treatment (Maratos, Gold, Wang, & Crawford, 2008).

A survey of recent research literature on music therapy and treatment for substance abuse yielded to an experimental receptive music therapy study that examined correlations between music preferences, drug preferences, and diagnoses among adolescents in treatment for substance abuse (Doak, 2003) revealing that music and drugs helped them to relax, escape reality, and elevate mood. The studies dealing with active music therapy concluded that active music therapy (i.e., drumming, improvising, moving to music, and music games), was effective in reducing depressive symptoms by inducing comfort and relaxation, and promoting positive physiological changes (Bittman et al., 2001; Cevasco, Kennedy, & Generally, 2005; Murphy, 2008; Schmid & Aldridge, 2004; Winkelman, 2003). The literature on improvisation and treatment of substance abuse is very limited and has reported the effectiveness of drumming in inducing relaxation and brain synchronization in individuals with substance abuse (Winkelman, 2003). A clinical article proposed that improvisational music therapy is a significant tool for treating those with substance abuse because it helps them to explore and express emotions, examine personal events, and access the imagination (Inselman & Mann, 2000).

Most studies typically used pre-post-data and some do not report the correlation between pre and post treatment resulting in absence of effect size calculation an aspect needed to demonstrate comparable subject improvements. Despite the appeal of music therapy in reducing symptoms of depression among individuals randomized to music therapy, and the beneficial effects on substance abuse individuals, studies continue to be sparse in both areas; more specifically, studies on the effectiveness of group improvisational music therapy on depression in substance were not found.

Method

Participants

Twenty-four male residents of Venezuela (16 to 60 years of age), participated in the study. All participants were Spanish speaking, and all were receiving treatment for substance abuse at *Fundación José Félix Ribas* (FJFR), located in Mérida-Venezuela (abstinence is mandatory to participate in treatment at this facility).

Inclusion criteria for the study were: (1) all participants had some kind of addiction problem, including addiction or abuse of psychotropic and pharmacological substances, including alcohol; (2) all participants had to be recently admitted to the treatment program for substance abuse at the center; (3) All participants had to have scores on the BDI or HRSD that indicated that they were significantly depressed (i.e., above 10 on the BDI, and above 7 on the HRSD). The sample was not a convenience sample since only those people who were depressed and not on medication were recruited.

Participants were excluded from the study for the following reasons: (1) they were unable to communicate (aphasia); (2) they were diagnosed with mental retardation and incapable of symbolic thinking; (3) they had hearing losses that impaired their abilities to hear music or the spoken word; and (4) they were not receiving medication for depression. Demographic and clinical data contained in the participants' records were not made available to the researcher by the facility. Therefore other types of problems besides depressive symptoms could not be considered for study.

As required by the facility, participants were put into groups and were referred to the researcher by a psychologist at the facility, based on previous and/or present depressive symptoms as evaluated by two exclusive mandatory tests administered by the facility upon entrance: the Beck Depression Inventory (BDI) and the Hamilton Rating Scale for Depression (HRSD). The researcher requested referrals at the beginning of each three-month treatment cycle at the facility, when new patients were admitted. On average, six to eight patients met inclusion criteria for the study per admission period. Each set of newly admitted patients who met inclusion criteria was randomly assigned to the experimental or control condition, and each set of patients participated in the study for a three-month period. A statistician used the Excel[®] program to generate random number lists in blocks; each list contained the numbers of subjects to be assigned to control and experimental groups. Sequentially numbered envelopes were created to ensure allocation concealment.

The study lasted nine months, over three treatment cycles at the facility. Thus, for each three-month period, three to six subjects were assigned to and received each condition. Thus, a total of 24 patients participated in the study, with half of them receiving the experimental conditions (in three separate treatment cycles), and the other half receiving the control conditions (in three separate treatment cycles). There were no participant exclusions or trial stops after randomization.

Materials

The BDI is a self-report which consists of 21 questions. It is a self-administered test measuring manifestations of depression, and takes approximately 10 minutes to complete. The highest score for each of the

21 questions is 3; the highest possible total for the whole test is 63. Scores and their corresponding levels of depression are as follows:

- 00–04 — possible denial of depression, or good faking;
- 05–09 — normal ups and downs;
- 10–18 — mild to moderate depression;
- 19–29 — moderate to severe depression;
- 30–63 — severe depression.

Reliability coefficients for the BDI in depressed and non-depressed individuals are found to be high (above .90) as well as validity coefficients (between .65 and .67) in psychiatric patients (Groth-Marnat, 1997).

The Hamilton Rating Scale for Depression (HRSD) is a measure of depressive symptoms in individuals diagnosed with depressive disorders; however, unlike the BDI which is a self-report inventory, this scale is filled out by a clinician. It is a standard measure of depression used in research on the effectiveness of depression therapies and treatments, and it is a standard test used to validate other measures of depression. It consists of 17 or 21 items, depending on whether measures of paranoia and obsession are included. The 17-item version was used in this study. This version measures symptoms specifically related to depression, such as guilt, insomnia, work-related problems, psychomotor retardation, agitation, anxiety, gastrointestinal and other physical symptoms, sex drive, hypochondriasis, loss of insight, loss of weight, suicidal thoughts, as well as information regarding suicide attempts.

A five-point scale (zero to four) is used in this version, as follows: (1) zero represents an absence of the depressive symptoms, (2) one indicates doubt concerning the presence of symptoms, (3) two indicates mild symptoms, (4) three indicates moderate symptoms, and (5) four represents the presence of severe symptoms. The remaining eight items are scored on a three-point scale (zero to two), as follows: (1) zero represents absence of symptoms, (2) one indicates doubt that the symptoms are present, and (3) two represents definitive presence of symptoms. The scores range from 0 to 54, as follows:

- 0–6 — a normal person with regard to depression;
- 7–17 — mild depression;
- 18–24 — moderate depression;
- above 24 — severe depression.

Reliability coefficients for the HRSD in psychiatric and non-psychiatric individuals are found to be high (between .76 and .92) as well as validity coefficients (between .80 and .90) for psychiatric population (Tollefson & Holman, 1993; Vazquez & Jiménez, 2000).

Design

This study utilized a pre-test, post-test control group design. Improvisational music therapy served as the independent variable (experimental group). Experimental group members also received standard treatment as provided by the facility. Participants in the control condition received standard treatment only. Dependent variables used in this study were: (1) self-rated depression scores on the BDI, and (2) psychologist-rated depression scores on the HRSD. Three cohort groups received the experimental condition (improvisational music therapy) for three months each, and three cohort groups received the control condition (usual treatment regimen from FJFK without music) for three months each. Prior to and after each three-month period, participants in each cohort group in the experimental and control conditions were individually administered the BDI and rated on the HRSD. Approval by the Institutional Review Board (IRB-10739) was obtained, and subjects were given an explanation of the study and an opportunity to provide informed consent.

Following the pre-test, participants were randomly assigned to the experimental (improvisational music therapy) group or the control (FJFK standard treatment) group.

The BDI and HRSD were administered within 24 hours of starting treatment and 24 hours of completing treatment. The BDI was administered by the researcher; the HRSD was completed by one psychologist at the center.

Upon collection of all the data, the experimental and control groups were compared on pre-test scores of both BDI and HRSD to determine whether the groups were equal or different before and after treatment. In addition, the pre-test and post-test scores on the BDI and HRSD were compared for each group to determine whether the depressive symptoms of each group improved as a result of the respective treatments.

Procedures

The researcher administered the BDI as a pre-test to all participants referred by the psychologist or psychiatrist at the facility and did not have access to medical charts. In addition, the psychologist provided an evaluation of the participant's level of depression on the HRSD. The psychologist did not know which participants were in the experimental and control groups. Moreover, the psychologist did not treat any of the participants. Following these two pre-tests, participants who met the criteria for the study were randomly assigned to a treatment group or control group.

The treatment group received two-hour improvisational music therapy sessions once weekly for three months; the control group participated in the regular three-month program provided by the facility (where music therapy

is not provided as part of the program). The standard treatment at FJFR includes: individual psychotherapy, group psychotherapy (emotional and cognitive-behavioral groups), family and couple groups, and morning groups conducted by advanced patients, pharmacotherapy, recreational, social and sport activities, special activities, general medical care, and social work assistance

In the treatment group, the researcher engaged the participants in group improvisation and discussion. At the first session, participants were instructed on how to improvise music using simple percussion instruments. They were encouraged to explore several instruments to gain skills in playing them. When participants were ready, the group engaged in a free music improvisation. Once the group improvisation ended, participants were invited to discuss their experiences of the improvisation, and/or to share whatever personal or interpersonal issues that may have been arisen as a result of these improvisatory experiences.

After the first session, and as individual and group issues emerged, a multi-expressive approach to improvisation was taken, combining various art forms within a single session. Thus, improvisation experiences varied by art form and alternated with verbal discussion of these experiences when needed. Thus, each session varied in content and sequence according to the needs of the group; however, all sessions contained some form of improvisation, and some degree of discussion.

Description of treatment protocol (see Appendix)

The improvisational model used in this study is based on Artistic Music Therapy (MAR in Spanish), a model developed by the present researcher. MAR is primarily a multi-expressive improvisational approach to individual and group therapy which employs referential and non-referential improvisations along with public performances. As defined by Bruscia (1987), the organization of music improvisation in reference to aspects other than music itself is called referential improvisation (e.g., improvising to feelings, events, ideas, etc.); the organization of improvisations based strictly on music considerations without *representing or referring* to any other aspects is called non-referential improvisation. MAR is multi-expressive in that it usually combines various art forms within a single session (e.g., dance/movement and music, dramatizing and music, painting and music, etc.). In MAR, music is the primary modality while other arts are used supplementally based on client need.

MAR sessions unfold from moment to moment according to the participants' responses. Typically, MAR sessions may begin with either a free discussion or a free music improvisation. When it begins with a discussion, issues that arise from the discussion are used as themes for subsequent music improvisations or explorations in other artistic media

(e.g., movement, poetry, or psychodrama). When the session begins with a free music improvisation, the group may then react to the improvisation, verbally or through another artistic media. Issues that arise in the reaction or discussion are then explored further through the most appropriate media. The session continues in this vein, alternating between identification of an issue through any medium, and the exploration of that issue in another medium. Emphasis is always given to the artistic parameters (i.e., specific improvisation for a choreograph) of all expressive works created by the clients.

Public performance is an important component of MAR and decisions to perform or rehearse previous improvisations or any other art product are based on client need. Participation in performance was not mandatory for any participant. When the decision to perform publicly was made, performances were planned according to significant products created during the process as identified by the participant (s), the therapist, or both. For example, a theme of a music improvisation that represented a very important movement toward the growth of a participant might be chosen for creating a choreograph or an instrumental piece or a combination of both. Also, relevant improvisations could be recreated as performances. Participants could select their audience accordingly.

Data analysis

The Statistical Program for the Social Sciences (SPSS) version 15.0 was used to compute central tendencies, group differences, pre- and post-test score differences, and the correlation between measures (see below). The Statistical Program for Power Analysis and Sample Size (<http://www.ncss.com/pass.html>) was used to compute effect size and power. Since alternative hypotheses were adopted, the criteria for significance was established at $p < .05$, one-tailed.

Ranges, means, and standard deviations were calculated on pre- and post-test scores on the Beck Depression Inventory (BDI) and the Hamilton Rating Scale for Depression (HRSD) as shown in Table 1. Given the small sample size, nonparametric statistical tests were used. Specifically, The Mann–Whitney U Test was used to compare the experimental with the control group on pre- and post-test scores on the BDI and HRSD. This test compares rank ordered scores of two independent samples; the U statistic reflects the difference between ranks of the two groups. The Wilcoxon Signed Ranks Test was used to compare pre-test with post-test scores in each group, on both the BDI and HRSD. It tests the median difference in paired data. The Spearman–Rank Correlation was used to examine the relationship between the BDI (self-rated depression) and the HRSD (psychologist-rated depression).

Table 1. Ranges, means and standard deviations for pre- and post-test scores on the BDI and the HRSD.

Measures	Pre-test scores		Post-test scores	
	(Ranges)	Mean (SD)	(Ranges)	Mean (SD)
BDI				
Control	(10–25)	14.91 (4.46)	(3–20)	12.66 (5.28)
Experimental group	(11–41)	18.66 (8.30)	(5–13)	10.58 (2.23)
HRSD				
Control	(13–38)	20.00 (7.24)	(7–30)	16.16 (7.08)
Experimental group	(10–29)	19.16 (5.33)	(8–16)	11.33 (2.53)

Note: a. One-tailed significance, not corrected for ties.

Results

Regarding levels of depression, the mean BDI score (18.66) of the treatment group fell into the moderate level of depression and the mean HRSD score (19.16) of the treatment group fell into the mild-severe level depression (see Table 1).

Two hypotheses were tested. The first hypothesis was that depressed individuals with substance abuse who received improvisational music therapy in addition to their standard treatment program (experimental group) will demonstrate a significant difference in BDI scores (self-rated depression), when compared with the control group, which received only the standard treatment program. Results of the statistical analysis using the Mann–Whitney *U* showed no significant differences ($p > .05$) between the improvisation and control groups on pre-test BDI scores (see Table 2). The experimental and the control groups did not differ in self-reported levels of depression prior to treatment. The Mann–Whitney also showed no significant differences ($p > .05$) between the group on post-test BDI scores. The statistical power of this comparison was 34% indicating a relatively high probability (66%) of a type II error (failing to reject the null hypothesis). There was insufficient evidence to reject the null hypothesis.

Wilcoxon Signed Rank Test comparisons on pre- and post-test scores on the BDI showed that:

- (1) the experimental groups had significantly lower BDI scores on the post-test as compared with the pre-test ($z = -2.84, p = .002$); and
- (2) the control groups also had significantly lower BDI scores on post-test as compared with the pre-test ($z = -1.73, p = .04$).

The second hypothesis was that depressed individuals with substance abuse who received improvisational music therapy in addition to their standard treatment program (experimental group) will demonstrate a

Table 2. Group comparisons of pre- and post-test scores on the beck depression inventory for the control and experimental groups.

Statistic	Control group	Experimental group
Pre-test BDI scores		
<i>N</i> of cases	12	12
<i>R</i>	128.50	171.50
<i>U</i>		50.50*
<i>z</i>		-1.25
* <i>p</i> = .10 ^a		
Post-test BDI scores		
<i>N</i> of cases	12	12
<i>R</i>	172.50	127.50
<i>U</i>		49.50*
<i>z</i>		-1.31
* <i>p</i> = .09 ^a		

Note: One-tailed significance, not corrected for ties.

significant difference in HRSD (psychologist-rated depression), when compared with the control group (improvisation group would have lower scores on the HRSD after treatment).

Results of the statistical analysis using the Mann–Whitney *U* showed no significant difference between the improvisation and control groups on pre-test HRSD scores ($p > .05$), as shown in Table 3. A significant difference was found, however, between the groups on the post-test HRSD scores ($p = .024$). After treatment the experimental group had significantly lower post-test HRSD scores than the control group. The statistical power of this comparison was 78% indicating a relatively low probability (22%) of a type error II (falling to reject the null hypothesis). The null hypothesis was rejected and the alternative hypothesis was accepted.

Wilcoxon Signed Rank Test comparisons on pre-and post-test scores on the HRSD showed that:

- (1) the experimental group had significantly lower HRSD scores on the post-test as compared with the pre-test ($z = -2.84$, $p = .002$); and
- (2) the control group also had significantly lower HRSD scores on the post-test as compared with the pre-test ($z = -2.13$, $p = .01$).

Since the results of the hypothesis testing showed that changes in depression varied according to the test used, the Spearman–Rank Correlation was used to examine the relationship between BDI and HRSD scores. The results showed a significant correlation between the two types of depression ratings on both the pre-test ($r = 0.51$, $p = .005$), and the post- test ($r = .77$, $p = .000$).

Table 3. Group comparisons of pre-test and post-test on the Hamilton Rating Scale for Depression scores.

Statistic	Control group	Experimental group
Pre-test HRSD scores		
<i>N</i> of cases	12	12
<i>R</i>	146.50	153.50
<i>U</i>		68.50*
<i>z</i>		-1.25
* <i>p</i> = .10 ^a		
Post-test BDI scores		
<i>N</i> of Cases	12	12
<i>R</i>	172.50	127.50
<i>U</i>		49.50*
<i>z</i>		-.203
* <i>p</i> = .02 ^a		

Note: a. One-tailed significance, not corrected for ties.

Nearly all of the post-test raw scores are lower than the pre-test scores on both the BDI and the HRSD. These decreases in score indicate corresponding decreases in depression ratings (see Table 4).

In order to clarify the effects of the two treatment conditions on depression, the Cohen's Effect Size was calculated on post-test scores on the BDI and HRSD of both groups. Results showed a medium effect size in improvement on the BDI ($d = 0.51$ at 69th percentile) and a large effect size in improvement on the HRSD ($d = 0.90$ at 82nd percentile). A power analysis of the group comparisons on post-test depression scores revealed a power of .34 on the BDI comparison, and power of .78 on the HRSD comparison. Computation of sampling error was 20.4%; error was under 50%, therefore data was considered reliable for both the BDI and HRSD comparisons. A statistician estimated sampling error by using sample size and comparing the differences in a comparison list at 95% confidence level ($p \leq .05$). For power she ran the two independent samples, ranked the data and then computed Hedges g (estimate of Cohen's d) at .80 level.

A post-hoc determination of sample size revealed that a minimum of 72 participants were needed for this study; however, the study had only 24.

Discussion

The relationship between self-rated and psychologist-rated depression

Synthesizing the two major findings of the present study, individuals with substance abuse showed a significant improvement in psychologist-rated depression (HRSD) as a result of improvisation therapy, but did not show significant improvement in self-rated depression (BDI), when compared to

Table 4. Group comparisons of pre-test and post-test raw scores on the Beck Depression Inventory and the Hamilton Rating Scale for Depression scores.

Cases	BDI raw scores		HRSD raw scores	
	Pre-test	Post-test	Pre-test	Post-test
Experimental group				
1	41	10	25	10
2	11	5	12	8
3	11	11	22	9
4	22	10	21	10
5	23	9	20	10
6	17	11	29	11
7	16	10	17	10
8	22	13	19	14
9	19	13	20	13
10	18	12	21	11
11	13	13	14	16
12	11	10	10	10
Control group				
1	11	5	19	11
2	19	10	25	20
3	10	3	16	7
4	11	15	26	13
5	25	20	38	30
6	13	13	15	13
7	15	10	16	10
8	15	17	25	28
9	11	11	14	14
10	20	19	17	20
11	14	17	13	16
12	15	12	16	12

regular treatment program alone. Psychologists apparently perceived more improvement in depression in their clients than the clients perceived in themselves (Revah-Levy, Birmaher, Gasquet, and Falissard, 2007).

From the standpoint of content validity, however, these tests reflect different aspects of depression (Hawley, Gale, Smith, & Sen, 1998): The HRSD measures the anxiety component and somatic distress while the BDI measures subjective distress and deterioration in daily activities (Brown, Schulberg, & Madonia, 1995). For this reason, the BDI and the HRSD can give discrepant results (Castrogiovanni, Maremmani, & Deltito, 1989). Specifically, self-assessment of depression can be distorted by anxiety and somatic symptoms (both measured in the HRSD) or by frequent difficulty in self-rating items due to the lack of concentration found in some depressive subjects (Ruiz, Silva, & Miranda, 2001). The HRSD and the BDI are predictive of one another as measures of depression but they measure different aspects.

Items on the BDI version used in this study have been found to address only some aspects of depression (Ojeda et al., 2003). According to the DSM-IV, depression involves changes in appetite (overeating or loss of appetite); however, item 18 of this version, addresses loss of appetite only. Thus, a subject who is overeating or becoming hungrier may have found it difficult to rate this item. Moreover, since overeating is not considered in this version, the subject may have obtained the lowest score (0) on item 18 since she/he was not experiencing loss of appetite. In the HRSD, the eating issue is specifically defined as changes in appetite, which includes both loss of appetite and overeating, thereby providing a more precise assessment option for the psychologist.

Richter, Werner, Heerlein, Kraus, and Sauer (1998) also found that on the BDI, ratings of one's own depressive symptoms is difficult when anxiety is not included as a factor. This may explain why the BDI is found to be more influenced by anxiety than the HRSD (Ruiz et al., 2001). If so, subjects may have not found items that rate their anxiety level, and as a result perceived little or no improvement in this area, even though anxiety was a focus of the improvisational music therapy sessions.

Recommendations

The methodological limitations of this study, in some part, can be attributed to paucity of well-designed treatment studies of depression among individuals with substance abuse, and the lack of information in the literature on the effects of improvisational music therapy as a treatment for depression in this population. It may be productive to run a pilot or exploratory study first to look for patterns of client response to this form of treatment (MAR). This would help to identify the most appropriate measures of depression, to identify other outcomes measures of relevance, and to generate new hypotheses to be formally tested.

Measuring depression in individuals with substance abuse seems to be a core issue in this study. The question is, which is more relevant to therapeutic effectiveness, measures of self-rated or psychologist-rated depression? The improvisational protocol used in this study helped participants to work with interior issues in a way that revealed these issues through the *exterior art forms*. While this exteriorization of the interior may have helped them to understand the meaning of their depression, the BDI may not be a valid measure of interior changes in the perception and understanding of depression. *Interior change* refers to the *interior* that emerges in the art work and its reflexive discourse as evidence of the subjective experience. Since the HDRS requires a personal interview it might have provided a greater opportunity for exteriorization of interior change.

It is important to emphasize that overlap between symptoms of depression and substance abuse is not yet well studied, therefore many questions remain

unanswered. However, treating this population with an integrated treatment approach, improvisational music therapy and regular treatment seemed to lead participants to: feel more relaxed with regard to both substance urge and symptoms of depression such as anxiety; gain greater sense and motivation to explore *who they were*; and experience less fear to share difficult life events. Since some subjects expressed that they felt “saved in music therapy” it is plausible to infer that improvisational sessions may have provided a protective effect making them feel “less likely to be at risk for substance use.” Compliance, attention and seriousness were observed in all participants. Interestingly, there were no drop-outs. Future research should also examine the relationship between this approach and motivation for treatment since most subjects were eager to participate in improvisational music.

Although quantification of research evidence is sparse, results indicated that further study would be worthwhile since improvisational music therapy was found useful.

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To the people who participated in the study.

Notes on contributor

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