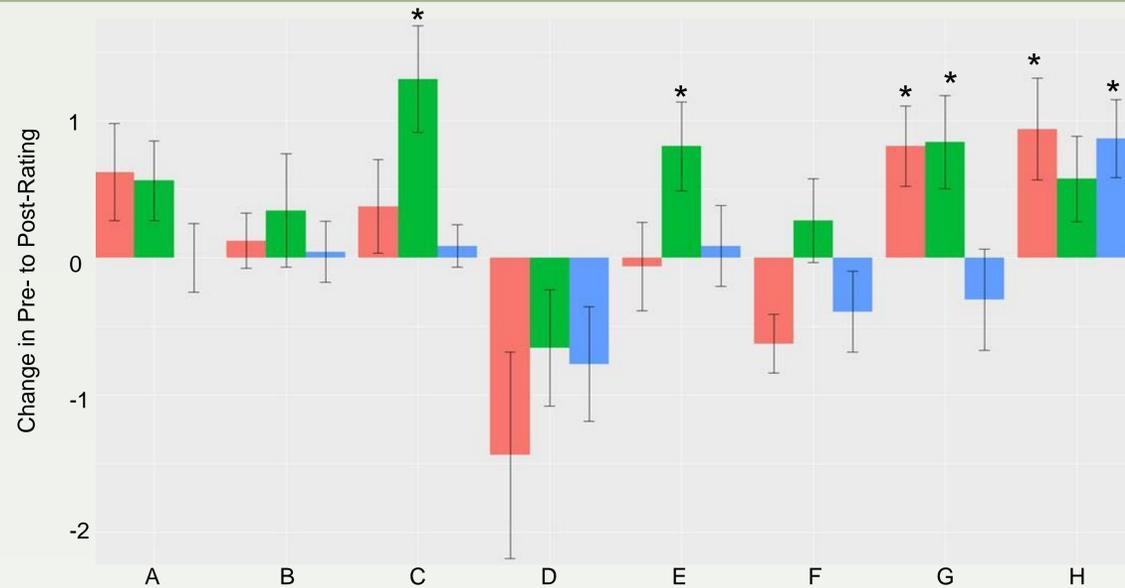


### Abstract

This study evaluated the impact of incorporating music in the group therapy setting on UConn’s Inpatient Psychiatry Unit. We aimed to assess if different music interventions would enhance patients’ therapeutic experience on the unit. Music’s effect on patients was evaluated in this IRB-approved prospective pilot study. Self-report, paired pre-post surveys were used to collect data on patients’ responses to three types of music sessions (*live, recorded, control*). Patients were asked to rate eight outcome measures. Twenty group sessions were conducted with ninety patients participating in the study. Characteristics and pre-session survey responses were similar across session types. Adjusting for pre-session responses, we discovered significant differences between session types in mood and quality of life when comparing live music and control sessions. Patients responded most positively to live music sessions when compared to either the recorded music or control sessions. The unadjusted session type-specific differences were related to patients’ self-esteem, mood, self-satisfaction, and quality of life (figure 1). This pilot study shows music has efficacy in enhancing hospitalized psychiatric patients’ overall well-being.

### Introduction

Psychopharmacology agents, although effective, are known for their range of adverse effects. It is important to identify ways to potentially augment treatments and ensure these options are safe, simple, and cost-effective. Objective measures of relaxation, such as heart rate, blood pressure, and respiratory rate, improve after only thirty minutes of music therapy [1, 2]. These physiologic changes are key indicators of activation of the parasympathetic nervous system’s “relaxation response,” which has been shown to support healing [3]. Studies have shown that music therapy can reduce perceptions of pain and anxiety 30-40% in post-surgical patients [1, 4]. In geriatric patients, music therapy decreased neuropsychiatric symptoms compared to standard recreational activities [5]. Patients with schizophrenia exposed to music therapy improve in global functioning with a number needed to treat (NNT) of 2 [6]. Compare this NNT to that of antidepressants (6-7) or antipsychotics excluding clozapine (5.5-10.1) [7, 8]. Music therapy is defined as “the clinical and evidence-based use of music interventions to accomplish individualized goals.” [9]



**FIGURE 1** Change in participant ratings from pre-session to post-session for the 8 measured outcomes with one standard deviation error bars. \*Indicates statistically significant differences between treatment groups. (Key: Pink = Control, Green = Live, Blue = Recorded; A = Enjoyment of life, B = Hopefulness, C = Mood, D = Negative Feelings, E = Quality of life, F = Satisfaction with relationships, G = Self-satisfaction, H = Self-esteem).

**TABLE 1** Patient demographics for music intervention and control group participants.

Patient Characteristic	% of 90 Patients
Gender: Male	53%
Age group: 18-30 years	31%
31-64 years	62%
65+ years	7%
Voluntarily admission	64%

**TABLE 2** Comments from patients on UConn John Dempsey Hospital’s Inpatient Psychiatry Unit regarding music sessions.

Session Type	Select Patient Comments*
Recorded Music	“I am very grateful for music, I love this session, made me feel good and this group should occur more often” “LOVE this!!!!”
Live Music	“Out of all my 25 hospitalizations, this was the best ending I have experienced” “This group should happen daily as it benefits all”
Control (no music)	“Music has a huge effect on my mood.”

\*No negative comments were excluded

### Methods

This IRB-approved prospective study determined music’s effect on patients admitted to UConn’s Inpatient Psychiatry Unit. Paired self-report surveys before and after 1-hour group sessions collected patients’ responses to 3 different sessions: *recorded* music, *live* music, and *control* (Table 1). Patients rated how they felt in 8 areas (Figure 1) on a 1 – 10 scale, with 10 being most positive except for negative feelings. Some patients included comments (Table 2). Bivariate associations were examined using  $\chi^2$  or Fisher’s Exact test between 2 categorical variables, equal or unequal variance T test between binary and continuous variables, and standard or Welch’s ANOVA between categorical and continuous variables with multiple comparisons adjusted pairwise post-hoc tests if appropriate.

### Results

Twenty group sessions were conducted (7 *recorded*, 8 *live*, 5 *control*). Pre-session responses and demographics were similar across session types. Unadjusted, paired pre-post surveys showed differences in self-esteem ( $t_{(71)} = 4.0, p = 0.0001$ ), mood ( $t_{(71)} = 3.4, p = 0.001$ ), self-satisfaction ( $t_{(70)} = 2.2, p = 0.032$ ), enjoyment of life ( $t_{(70)} = 2.3, p = 0.027$ ), and negative feelings ( $t_{(69)} = -3.0, p = 0.004$ ). Session type-specific paired t-tests for pre-post rating differences showed increases in pre- to post-session ratings for **self-esteem** (*recorded*, [ $t_{(22)} = 3.1, p = 0.006$ ]; *control*, [ $t_{(15)} = 2.5, p = 0.023$ ]), **mood** (*live*, [ $t_{(32)} = 3.4, p = 0.002$ ]), **quality of life** (*live*, [ $t_{(31)} = 2.5, p = 0.018$ ]), and **self-satisfaction** (*live*, [ $t_{(31)} = 2.5, p = 0.019$ ]; *control*, [ $t_{(15)} = 2.8, p = 0.0001$ ]) (Figure 1).

### Discussion

Patients appeared to respond more positively to *live* music group sessions when compared to either the *recorded* music or *control* (no music) sessions. There was no evidence to suggest that patients responded differently to *recorded* music sessions versus *control*, however they expressed positive qualitative feedback (Table 2). The unadjusted session type-specific differences were related to patients’ self-esteem, mood, self-satisfaction, and quality of life. This study shows that music had efficacy in enhancing hospitalized psychiatric patients’ overall well-being. Future studies plan to explore whether music played to the entire milieu (versus small-group setting only) might further positively impact patients and/or psychiatry staff.

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