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Effects of Music Therapist Positioning within Patient-Preferred Live Music on Affect, Pain, and Trust:

A Three-Group Randomized Pilot Study

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Abstract

Background: Although patient-preferred live music (PPLM) can be an effective music therapy intervention for mood and pain with hospitalized adult medical patients, there is a lack of literature concerning therapist positioning within PPLM interventions.

Objective: The purpose of this randomized pilot study was to determine the effects of therapist positioning within PPLM on positive and negative affect, pain, and trust in the therapist with adults on a cardiovascular unit.

Methods: Participants (N=27) were randomly assigned to one of three single-session conditions: PPLM delivered with the therapist sitting, PPLM delivered with the therapist standing, or wait-list control. Positive and negative affect were measured with the Global Mood Scale, pain was measured with a 10-point Likert-type scale, and trust in therapist was measured with the Wake Forest Physician Trust Scale.

Results: Results indicated no significant between-group difference in positive affect, negative affect, or pain. Control participants tended to have slightly lower posttest positive affect mean scores and slightly higher posttest negative affect and pain scores, indicating that both PPLM conditions had more favorable results than the control condition. Regardless of therapist positioning, descriptive statistics for affect and pain were more favorable after PPLM. Concerning trust in the therapist, there was no difference between the sitting and standing conditions.

Conclusion: Regardless of the therapist's positioning, a single PPLM session can be an effective intervention for immediately improving positive and negative affect and pain for adult inpatients on a cardiovascular unit. Concluding this pilot study are limitations, implications for clinical practice, and recommendations for future investigation.

Keywords: *music therapy, patient preferred live music, therapist position, cardiovascular, positive and negative affect, pain, trust in the therapist*

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Review of Literature

Cardiovascular Disease

With an average of 2,200 deaths per day, cardiovascular disease (CVD) is the leading cause of death in the United States (US) and has been since 1919 (National Center for Health Statistics, 2013). Accounting for over 360,000 deaths annually, coronary heart disease is the most common type of CVD. The total number of inpatient cardiovascular treatments has increased from 2000 to 2010 (from 5,939,000 to 7,588,000; Mozaffarian et al., 2016). The estimated combined direct and indirect cost of CVD in the US from 2011 to 2012 was $316.6 billion (Mozaffarian et al., 2016). Heart disease, stroke, and hypertension are within the 15 foremost conditions resulting in disability among people in the United States with functional disabilities (Brault, Hootman, Helmick, Theis, & Armour, 2009). Medical expenses related to direct care of CVD are estimated to reach approximately $918 billion by 2030 in order to treat a predicted 40.5% of the US population with some form of CVD (Heidenreich et al., 2011). Thus, CVD represents a major societal problem and additional treatments are needed.

People with CVD may experience increased stress and anxiety (Barnason, Zimmerman, & Nieveen, 1995; White, 1999) due to the chronic nature of the illness, potential hospitalizations, and financial burden (Benjamin et al., 2017). Increased anxiety can have negative physiological effects such as elevated adrenaline and cortisol levels that increase heart rate and blood pressure. Researchers have suggested that anxiety may increase the risk of complications resulting in a worse prognosis for people with CVD (Januzzi, Stern, Pasternak, & DeSanctis, 2000; Jiménez-Jiménez, Garcí-Escalona, Martín-López, De Vera-Vera, & De Haro, 2013).

Music Therapy Intervention and Cardiovascular Disease

While cardiac rehabilitation programs can address patients' physical needs, common psychological symptoms of CVD including depression, stress, and anger/hostility can benefit from therapeutic intervention. Music therapy can be applied to as a psychosocial treatment to address psychological symptoms associated with CVD. Researchers have studied specific active and receptive music therapy interventions for CVD patients and indicated care should be based on each patient's current needs, situation, and setting (Dileo & Bradt, 2009). Music therapists can provide an array of interventions that may positively contribute to multidisciplinary teams and patient well-being (Dileo & Bradt, 2009).

Music listening can address CVD patient needs related to pain, stress, anxiety, and insomnia management (Leist, 2013). In a book chapter synthesizing music intervention research in cardiac care, the authors noted that both music selected by patients or by music therapists within music listening can elicit beneficial outcomes in pain, anxiety, and mood for cardiac patients (Hanser & Mandel, 2005). Although not exclusive to music therapy, Bradt, Dileo, and Potvin (2013) conducted a systematic review of music interventions for CVD and found that music listening may reduce psychological distress, anxiety, respiratory and heart rates, and pain. While passive music listening can represent an inexpensive option targeting affective factors in adult medical patients (Dileo & Bradt, 2009), music therapy involves more relational depth and can target numerous aspects relevant to CVD. Music therapists can implement music listening using pre-recorded or live music to improve both the physiological symptoms and anxiety of critically ill patients (Gerweck & Tan, 2010). Additional research with larger samples sizes is warranted to investigate mechanisms of change in various music therapy interventions for people with CVD and differentiate it from non-music therapy music interventions (Bradt et al., 2013).

Patient-preferred live music (PPLM) is a specific type of music therapy intervention that is frequently used with adult medical patients. PPLM can be defined as a non-physically active music therapy intervention wherein the patient selects preferred music to be performed live by a qualified music therapist (Silverman, Letwin, & Nuehring,

2016). PPLM may constitute an optimal intervention for anxiety, depression, and psychological distress for adults in medical settings due to the ability of music therapists to adjust to service users who have low energy and motivation levels (Miller & O'Callaghan, 2010). There is empirical support for PPLM to increase relaxation and decrease anxiety (Chaput-McGovern & Silverman, 2012; Crawford et al., 2013; Ferrer, 2007; Madson & Silverman, 2010; Rosenow & Silverman, 2014; Yates & Silverman, 2015), improve mood or improve positive affect and decrease negative affect (Crawford et al., 2013; Fredenburg & Silverman, 2014), improve fatigue and decrease nausea (Chaput-McGovern & Silverman, 2012; Madson & Silverman, 2010; Rosenow & Silverman, 2014), and decrease pain (Chaput-McGovern & Silverman, 2012; Fredenburg & Silverman, 2014; Madson & Silverman, 2010; Rosenow & Silverman, 2014) in hospitalized adults. Based from the published literature, it seems that PPLM can be a preferred (Chaput-McGovern & Silverman, 2012; Crawford et al., 2013) and effective intervention for adults in medical settings (Silverman et al., 2016).

While there is empirical support for PPLM in adult medical settings, there is a lack of research exploring PPLM for CVD patients. Within a music therapy outpatient support group setting, Leist (2011) found a significant decrease in mood disturbance, anxious mood, and an increase in vigor in CVD patients who participated in music-assisted relaxation and active music therapy interventions once weekly for six weeks. In an innovative CVD study, Ghetti (2013) utilized both active instrument play and passive music listening music therapy interventions throughout individual sessions in combination with Emotional-Approach Coping dialogue (EAC) and found that patients who received music therapy and EAC had improved positive affect, had the shortest procedure length, and used the least amount of analgesic required during the procedure in comparison to the EAC-only group. While Ghetti (2013) incorporated PPLM into the music therapy sessions, it is difficult to distinguish the effects of PPLM as an autonomous intervention. In a related randomized controlled trial, Selle and Silverman (2017) measured the impact of a single PPLM music therapy session with adult patients on a cardiovascular unit. Results indicated significant between-group posttest differences in pain, anxiety, and depression favoring the PPLM condition. The authors recommended PPLM as an ideal intervention for mood enhancement and pain reduction in hospitalized CVD patients.

Music Therapy Intervention and Therapeutic Alliance

There are a number of factors than can influence therapeutic outcomes. As a primary component influencing therapeutic outcome, therapeutic alliance is defined as the relationship between therapist and patient and can be influenced by both parties (Horvath & Symonds, 1991). Researchers have found consistent positive associations between therapeutic alliance and therapeutic outcome (Horvarth & Bedi, 2002; Orlinsky, Ronneslad, & Willutzki, 2004). Regardless of the type of therapy or philosophical orientation, therapists have been interested in therapeutic alliance as a vital element of therapeutic outcome (Tasca et al., 2015).

Researchers have noted specific common factors required to develop effective therapeutic alliance and resultant therapeutic outcomes. Laska, Guman, and Wampold (2014) highlighted the emotional bond between patient and therapist and a confiding and healing setting for therapy as important aspect of the alliance. Carl Rogers, an influential therapist within client-centered therapy and humanism, emphasized conditions of trustworthiness and genuineness as influencers of alliance and therapeutic change (Rogers, Gendlin, Kiesler, & Truax, 1967). Moreover, a relationship that is warm, supporting, and caring constitutes a vital aspect of the therapeutic alliance (Luborsky, 1976).

The patient's perspective of the therapeutic alliance represents a crucial part of successful therapeutic change. In fact, the patient's perspective has a stronger correlation with successful outcomes than the therapist's perception. Duncan, Miller, Wampold, and Hubble (2010) found 80% of the treatment effects were the result of patients be-

lieving in the therapist's ability. While there are multiple factors that may influence therapeutic alliance and subsequent outcomes, the current objectivist pilot study seeks to investigate the influence of the music therapist's positioning (i.e., sitting or standing) within PPLM on mood, pain, and trust.

Healthcare Provider Positioning

As therapeutic alliance is a predictor of therapeutic outcome and the patient's perspective is the most important component of therapeutic alliance, patient satisfaction may be indicative of effective therapeutic relationships. Patient satisfaction is directly related to the interpersonal skills of physicians (Bertakis, Roter, & Putnam, 1991; Suchman, Roter, Green, & Lipkin, 1993) and has motivated professional organizations to implement improved training and evaluation of providers' communication skills (Klass et al., 1998).

As positioning represents a factor that can impact patient satisfaction with their healthcare provider, researchers have explored how provider positioning impacts a number of variables. Within an inpatient medical setting, Tackett et al. (2013) found that physicians sitting down at any time during a patient interaction is significantly associated with higher Press-Ganey satisfaction ratings and recommended sitting as an etiquette-based medicine behavior. In a related study, Swayden et al. (2012) reported that 95% of comments about physicians in a seated position were positive while only 61% of comments were positive when the same patients saw a standing physician.

However, the literature has mixed results concerning positioning when examining patient perceptions of physician-patient interactions within inpatient hospital settings. For example, the patient-rated quality of the interaction did not differ between sitting and standing conditions regarding quality of interaction between pediatrician and new mothers (Valdes et al., 2003). When researchers included time as a possible indicator of quality interaction, there was a significant difference in the perceived time providers spent with the patient when the physician was seated (Valdes et al., 2003). In related research, patients perceived seated physicians as staying longer than standing physicians (Johnson, Sadosty, Weaver, & Goyal, 2008; Swayden et al. 2012) although the actual time in the room was not different across conditions (Swayden et al., 2012).

There are mixed results when studying positioning during physician-patient interactions. In a study providing inconclusive results concerning provider positioning, physician-patient clinic consultations were evaluated through a one-way mirror. Results indicated no positive correlation between provider positioning or eye contact with patient satisfaction (Comstock, Hooper, Goodwin, & Goodwin, 1982). However, other researchers have found that patients within an outpatient setting rated seated physicians as more compassionate than standing physicians (Bruera et al., 2007; Strasser et al., 2005). Bruera and colleagues (2007) presented videos of physicians and found the overall impression and compassion of the seated physician was significantly greater than the standing physician when giving bad news to cancer patients. In a related study, participants had a significant preference for a video sequence that involved a physician sitting first and then standing during their patient interaction in comparison to standing first and then sitting (Strasser et al., 2005). The majority of participants preferred the sitting than the standing physician sequence. When asked directly, patients frequently noted that they preferred seated physicians (Strasser et al., 2005).

Concerning the nursing literature related to practitioner positioning, Wadsworth (2017) found that nurses who sat at the bedside when communicating with their patients at least once per shift increased satisfaction scores from 66.67% to 96.49% in the month after implementation. Moreover, these results were sustained over a year (Wadsworth, 2017). When comparing nurse leaders who had one daily patient interaction with nursing staff who had multiple daily interactions, Pattison, Heyman, Barlow, and Barrow (2017) found no significant difference in the perceived quality of the interaction between sitting and standing groups. The researchers evaluated the quality of the interaction and time (as a possible indicator of satisfaction) and found no sig-

nificant difference in the patient rating of the nurse leader or the perceived amount of time (Pattison, Heyman, Barlow, & Barrow, 2017).

Although there is research supporting PPLM in adult medical settings (Silverman, Letwin, & Nuehring, 2016) and mixed results in research concerning practitioner positioning, these factors have not been merged in the literature. Therefore, there is a crucial gap in the research base evaluating how therapist positioning within PPLM might impact affective and relational variables in cardiovascular patients. Therefore, the purpose of this randomized effectiveness pilot study was to determine if therapist positioning (sitting versus standing) during PPLM influences positive and negative affect, pain, and trust in the therapist with adults on a cardiovascular unit. The research questions were as follows:

1. Are there between-group differences in positive affect, negative affect, and pain when PPLM is delivered standing, PPLM is delivered sitting, and a control condition?
2. Are there between-group differences in trust in the therapist when PPLM is delivered standing compared with PPLM is delivered sitting?

Method

Participants

Research participants ($N = 27$) were adult inpatients[1] on the cardiovascular unit of a large Midwestern teaching hospital within the data collection period of October 2017 to April 2018. In efforts towards purposeful inclusivity within this pilot study, inclusion criteria were a) a patient on the cardiovascular unit, b) 18 years of age or older, c) capable of reading, writing, or speaking in English to complete study forms, and d) had not previously participated in the current research study. The study was purposefully inclusive, and the researchers took a transdiagnostic approach to offer music therapy to as many patients on the cardiovascular unit as possible.

All participants signed an informed consent form. Patients who were on the unit for multiple days when the principal investigator (PI) was available were offered additional music therapy sessions but were only eligible to complete the study during their first session. The researchers completed all necessary training and received approval for the study from their affiliated Institutional Review Board (#00000, 545) prior to data collection.

Instruments

The Global Mood Scale was used to measure positive and negative affect scores at pre- and posttest by all participants (GMS; Denolett, 1993). The GMS assesses an individual's emotional distress through the two-factor model of mood (Watson & Tellegen, 1985). The scale rates 10 *positive affect* words, such as bright and hard-working and 10 *negative affect* words, such as worn out or insecure. Items are rated on a scale from 0 representing "not at all" to 4 representing "extremely." Patients rate the extent of which they are currently experiencing the named word. Affect word scores are added together within their respective categories. The GMS is an efficient, reliable, and valid measure for patients with coronary heart disease ($\alpha > 0.90$, $r > 0.55$ over 3-month period).

A 10-point Likert-type scale was used to collect self-report pain ratings at pre and posttest for all participants. The pain scale was anchored such that 1 indicated "no pain" and 10 indicated "highest amount of pain" to expediently assess pain. This procedure was similar to how other hospital practitioners assessed pain and, due to a hospital-wide initiative to reduce pain non-pharmacologically, the unit nurse manager requested this measure be included in the current study.

Trust in the therapist was measured by the Wake Forest Physician Trust Scale and was completed only at posttest by the PPLM groups (Hall et al., 2002). The instrument

evaluates a patient's interpersonal trust with a known physician or other healthcare provider and each question is associated with one or more of the following themes: fidelity, competence, honesty, and global trust. The instrument is a 10-item self-report scale with numeric values attributed to strongly agree (1) to strongly disagree (5). Three items are reverse coded. Question ratings, when combined, provide an overall trust indication score from 10–50 with higher scores indicating greater trust. Cronbach's alpha tests were .93 and .92 within respective national and regional trials and within a regional trial, two-month test-retest reliability was .75. Means were 40.8 (SD = 5.8) and 42.2 (SD = 5.8) for the respective national and regional trials. Instrument creators indicated the scale is applicable and feasible for use by non-physician health care workers.

Design and Procedure

This study employed a three-group randomized experimental design with a wait-list control. Randomization was determined via a computer program (http://www.randomizer.org). Participants in the PPLM conditions received PPLM in one of two ways: PPLM delivered sitting (sitting) or PPLM delivered standing (standing). All PPLM sessions were a single music therapy session. Sitting and standing PPLM participants completed both pre and posttest measures of positive and negative affect and pain and a posttest of trust. Patients in the control group completed pretests, then had a 20 to 30-min wait period and completed posttest. Control participants only completed measures of positive and negative affect and pain. After completing the posttest, control participants received a PPLM session. Completion of pre- and posttest questionnaires lasted approximately 5-min, and the PPLM music therapy session lasted approximately 20 to 30-min.

The PI approached each patient individually and asked if they would like to receive a session of PPLM. Patients who accepted a session of PPLM were asked by the PI if they would like to be involved in research. For patients who voluntarily elected study participation, the PI obtained informed consent and followed the procedure appropriate for the patient's assigned treatment group.

Regardless of study participation, participants who received PPLM chose two to three songs from a list of 27 songs in a variety of musical genres (see Appendix). While the PI supplied a list of songs (or "menu") from which the patient could choose therefore limiting PPLM, this song selection method is consistent with results from Walworth (2003) who found that playing a song in the patient's preferred genre or by a patient's preferred artist is as effective in reducing anxiety as using a specific song. The song list was created based on song lists previously found effective with this geographic region and setting (Bergh & Silverman, 2018; Selle & Silverman, 2017).

If the participant was assigned to the control group, the PI asked the participant to sign a consent form, had the participant complete the pretest, and provided a song list before leaving for a 20 to 30-min wait period. Upon return, the PI asked the participant to complete the posttest form before beginning the PPLM session with the songs chosen by the patient during the wait period. Before beginning to play the requested songs, the PI found a place to sit in the room (e.g. a window ledge, a foldable chair) at which the PI would be at eye level with the participant and at either left or right side of patient's bed.

If the patient was randomized to the PPLM sitting group, the PI asked the participant to sign a consent form and then completed the pretest questionnaire. While the participant completed the pretest form, the PI found a place to sit (e.g. a window ledge, a foldable chair) and sat for the remainder of the interaction. As the hospital room was not large, the PI sat approximately 3 feet from the patient. The PI then provided the participant with the song list and asked them to choose songs during the PPLM music therapy session. The PI engaged in patient-directed conversation between songs concerning topics often including memories associated with songs, the PI's music presentation, or the participant's preferred music. Length of conversation was determined by

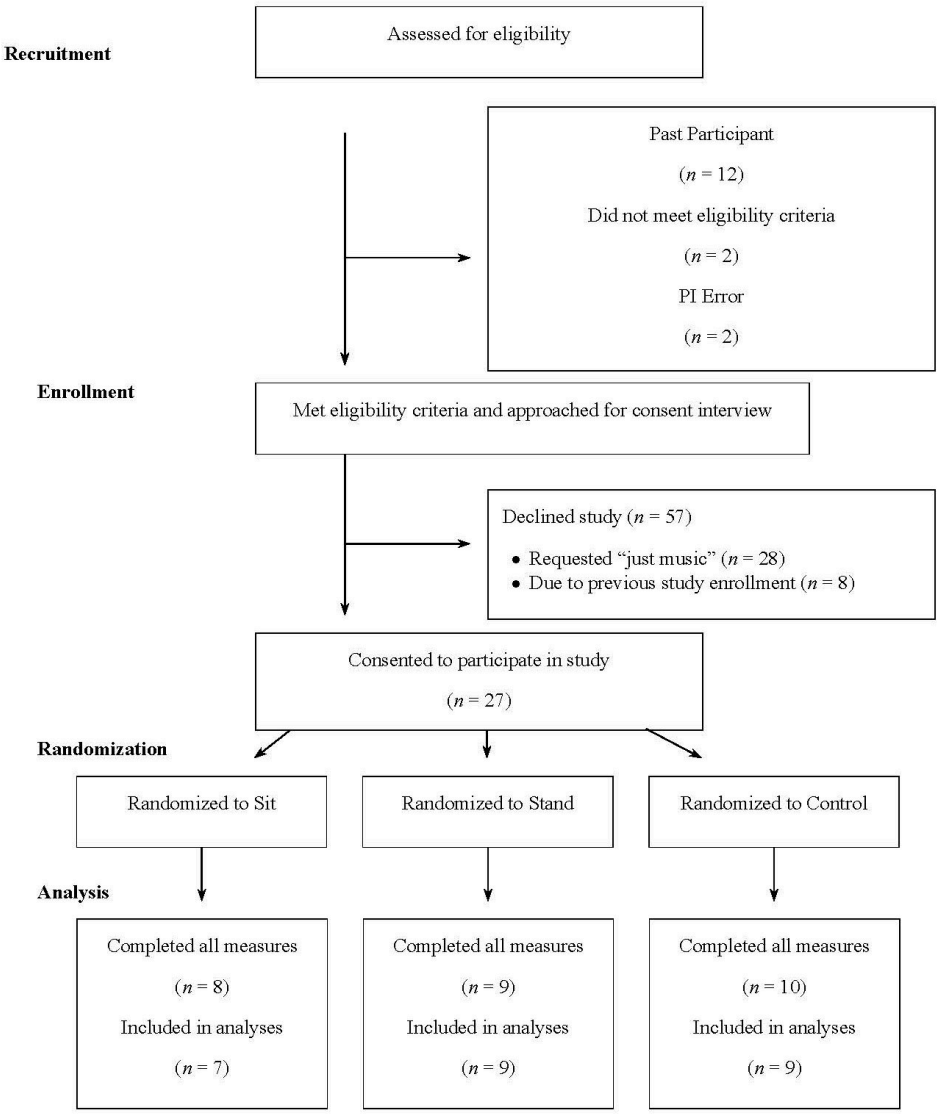

Figure 1

participant initiation and PI intuition. At the conclusion of the session, the PI asked the participant to complete the posttest questionnaire and then thanked the participant for their voluntary participation.

If the patient was randomized to the PPLM standing group, the PI and the participant underwent the same procedure as the PPLM sitting group except the PI would stand next to mounted nurse's stand in the patient's room located on either left or right side of participant's bed. As the hospital room was not large, the PI stood approximately 3 feet from the patient.

Power Analysis

To achieve a medium effect size (.25) with three separate treatment groups, one hundred fifty-eight participants would be required when ? = .05 for a power of .80 using an ANCOVA. However, data collection concluded at the end of the academic year due to the PI's status as an unfunded undergraduate music therapy student with limited time to spend on the cardiovascular unit.

Statistical Analyses

Chi-square tests were used to analyze between-group differences in gender and ethnicity. The researchers did not perform an analysis among diagnoses due to too many categories to authentically condense into new categories. ANOVAs were conducted between length of hospital stay, age, as well as pretest scores of pain, energy, and fatigue. Pre and posttest correlational analyses demonstrated significant relationships (positive affect: $r = .815$, $p = .000$; negative affect: $r = .721$, $p = .000$, pain: $r = .443$, $p = .044$). Because the researchers found significant correlations across pre and posttest measures of positive and negative affect and pain, analyses of covariance (ANCOVAs) were applied to determine significance among the posttest dependent measures. Within the ANCOVAs, covariates were pretest scores, dependent measures were posttest scores, and the fixed factor was the treatment group. The authors used SPSS version 23 to analyze data. Kotrlik, Williams, and Jabor (2011) was used to interpret the effect sizes: small $\leq .08$; medium .09 – .24; large $\geq .25$.

Results

Data were collected between October 2017 and April 2018. Of 121 eligible participants, 27 voluntarily participated in this pilot study, indicating a 22% enrollment rate. Although the PI did not record data on causes for people's specific reasons for declining study participation to remain inobtrusive, she observed that the following reasons may have contributed: not being interested in hearing live music, low energy levels, currently visiting with family or friends, or anticipating another event such as a medical procedure or meal. Figure 1 depicts the flow of participants throughout the study.

Demographics

There was no significant between-group difference in gender ($X^2[2] = 1.589$, $p = .452$), ethnicity ($X^2[6] = 7.153$, $p = .307$), age ($F[2,23] = 2.007$, $p = .157$), or days in hospital ($F[2,22] = 0.350$, $p = .709$). Descriptive data regarding patient age and length of hospitalization are depicted in Table 1. Demographic information is depicted in Table 2.

Table 1

Descriptive statistics: Age and days on the unit

	Sit			Stand			Control		
	M	SD	n	M	SD	n	M	SD	n
Age	50.56	19.00	9	61.67	18.30	9	45.63	12.58	8
Days on the unit	18.13	13.93	8	12.56	16.55	9	14.00	10.78	8

Table 2

Frequency data: Gender, ethnicity, and diagnosis

		Sit	Stand	Control
Gender				
	Female	5	7	4
	Male	4	2	4
Ethnicity				
	African American	1	1	0
	American Indian	2	0	0
	Caucasian	6	7	8
	Native American	0	1	0

		Sit	Stand	Control
Diagnosis				
	No Response	0	1	1
	A-Fib	0	1	0
	Aortic Stenosis	0	0	1
	Diagnosis Chf, pulmonary hypertension	1	0	0
	Double Lung Transplant	0	0	1
	Fluid in Lungs	0	1	0
	Heart A-Fib,	0	0	1
	Heart Failure	1	0	0
	Heart Transplant	0	0	1
	Heart Valve Surgery	1	0	0
	HERT pip	0	0	1
	On Heart Transplant List	1	0	0
	Lung Transplant	2	0	0
	LVAD	0	2	0
	LVAD Heart Installation	1	0	0
	LVAD Implant	0	1	0
	LVAD with LDH (suspended thrombis)	0	0	1
	O-Septic	1	0	0
	Periocardal fluid	0	1	0
	Peripart	1	0	0
	Pneumonia	0	1	0
	Possible Cardiac Event	0	0	1
	Transplant	0	1	0

Pretest Measures

Pretest measures of positive affect ($F[2,22] = 0.308$, $p = .738$), negative affect ($F[2,23] = 0.573$, $p = .572$), or pain ($F[2,22] = .190$, $p = .828$) concluded no significant between-group difference among pretest measures. Tests on demographics and pretest scores indicated no between-group difference. As such, randomization was successful.

Research Question 1: Are there between-group differences in positive affect negative affect, and pain when PPLM is delivered standing, PPLM is delivered sitting, and a control condition?

Positive Affect

- Overall: Posttest measures of positive affect indicated no significant between-group difference ($F[2, 21] = 0.519$, $p = .602$, partial $n^2 = .047$).
- PPLM vs. Control: Although not significant, participants in both PPLM conditions tended to have slightly higher mean posttest positive affect scores (sitting: $M = 21.04$, $SD = 11.57$, $n = 8$; standing: $M = 23.06$, $SD = 4.62$, $n = 9$) than in the control condition ($M = 18.00$, $SD = 11.85$, $n = 8$).
- Sitting Condition vs. Standing Condition: Although not significant, participants in both PPLM conditions with the standing condition tended to have slightly higher mean posttest positive affect scores ($M = 23.06$, $SD = 4.62$, $n = 9$) than in the sitting condition ($M = 21.04$, $SD = 11.57$, $n = 8$).

Negative Affect

- Overall: Posttest measures of negative affect indicated no significant between-group difference ($F[2, 26] = 0.294$, $p = .748$, partial $n^2 = .026$).
- PPLM vs. Control: Although not significant, participants in the control condition tended to have lower posttest mean negative affect scores ($M = 13.50$, $SD = 9.62$, $n = 8$) than the PPLM conditions (sitting: $M = 18.01$, $SD = 10.98$, $n = 9$; standing: $M = 19.38$, $SD = 9.12$, $n = 9$).
- Sitting Condition vs. Standing Condition: Although not significant, participants in the standing condition tended to have slightly higher mean posttest negative affect scores ($M = 19.38$, $SD = 9.12$, $n = 9$) than participants in the sitting condition ($M = 18.01$, $SD = 10.98$, $n = 9$).

Pain

- Overall: Posttest measures of pain indicated no significant between-group difference ($F[2, 17] = 1.427$, $p = .267$, partial $n^2 = .144$).
- PPLM vs. Control: Although not significant, participants in both PPLM conditions tended to have slightly lower mean posttest pain scores (sitting: $M = 2.50$, $SD = 1.55$, $n = 7$; standing: $M = 2.17$, $SD = 1.47$, $n = 6$) than in the control condition ($M = 3.88$, $SD = 3.60$, $n = 6$).
- Sitting Condition vs. Standing Position: Although not significant, participants in the standing condition tended to have slightly lower posttest pain scores ($M = 2.17$ $SD = 1.47$, $n = 6$) than participants in the sitting condition ($M = 2.50$, $SD = 1.55$, $n = 7$).

Table 3 depicts descriptive statistics while Table depicts ANCOVA results.

Table 3

Descriptive statistics: Positive and negative affect and pain

	Sit			Stand			Control		
	M	SD	n	M	SD	n	M	SD	n
Pre positive affect	16.45	9.93	8	18.94	2.96	9	16.13	10.05	8
Pre negative affect	19.21	8.56	9	21.44	8.31	9	16.38	12.24	8
Pre pain	4.29	2.97	7	3.83	2.66	6	3.63	2.56	6
Post positive affect	21.04	11.57	8	23.06	4.62	9	18.00	11.85	8
Post negative affect	18.01	10.98	9	19.38	9.12	9	13.50	9.62	8
Post pain	2.50	1.55	7	2.17	1.47	6	3.88	3.60	6

Table 4

Posttest ANCOVA results: Positive and negative affect and pain

	ANCOVA Statistics			Sit			Stand		Control	
	df	F	p	Partial n^2	M	SE	M	SE	M	SE
Positive affect	2, 21	0.519	.602	.047	21.81	2.05	21.41	1.95	19.09	2.05
Negative affect	2, 26	0.294	.748	.026	18.00	2.40	17.69	2.43	15.47	2.58
Pain	2, 17	1.427	.267	.144	2.33	0.86	2.20	0.93	4.00	0.81

Research Question 2: Are there between-group differences in trust in the therapist when PPLM is delivered standing compared with when PPLM is delivered sitting?

Results from ANOVAs indicated there were no significant between-group differences in any trust subscales or total trust, all $p > .05$.

Sitting Condition vs. Standing Condition:

- Although not significant, means for fidelity, honesty, and global trust in the therapist tended to be slightly higher when PPLM was delivered standing.
- Although not significant, means for total trust in the therapist were almost identical between sitting and standing conditions (sitting: M = 37.14, SD = 4.60, n = 7; standing: M = 37.13, SD = 6.06, n = 8)

Inferential and descriptive statistics of trust in the therapist scores are depicted in Table 5

Table 5

Inferential and descriptive statistics: Trust in the therapist

		Sit			Stand		
Dependent measure	Statistics	M	SD	n	M	SD	n
Fidelity	$F(1, 14) = 0.255$, $p = .622$, Partial $n^2 = 0.018$	8.29	1.89	7	8.67	1.12	9
Competency	$F(1, 14) = 0.743$, $p = .403$, Partial $n^2 = 0.050$	12.71	1.38	7	11.56	3.32	9
Honesty	$F(1, 13) = 1.384$, $p = .260$, Partial $n^2 = 0.096$	2.71	.95	7	3.38	1.19	8
Global	$F(1, 13) = 0.136$, $p = .718$, Partial $n^2 = 0.010$	13.43	4.16	7	14.13	3.14	8
Total trust	$F(1, 13) = 0.000$, $p = .995$, Partial $n^2 = 0.000$	37.14	4.60	7	37.13	6.06	8

Discussion

This randomized pilot study was completed to ascertain if therapist positioning during PPLM influenced positive and negative affect, pain, and trust in the therapist with adult inpatients on a cardiovascular unit. Although not significant, posttest data indicated tendencies for slightly more favorable positive and negative affect and pain scores for PPLM conditions than the control condition. These findings are consistent with existing research (Selle & Silverman, 2017; Silverman, Letwin, & Nuehring, 2016). Concerning within-group mean differences from pre to posttest, pain levels decreased for both PPLM conditions while pain levels increased for the control group. Sitting and standing PPLM groups demonstrated no between-group difference in the patients' total trust in the therapist. Due to the small sample size, limitations of the design, and lack of significant differences, the researchers urge caution in generalizing these results.

Throughout the intervention and data collection processes, the PI noted circumstantial preferences for the seated positioning when interacting with patients. After learning about the study, patients frequently asked which condition she believed would yield the best results (to which she remained neutral for the purposes of limiting bias) and would often share their prediction (which was most frequently the sitting condition). Regardless of study participation, the PI anecdotally noted that patients tended to interact with her for longer durations when she was sitting. This increased interaction duration may indicate development of therapeutic alliance and trust with patients assuming that a seated provider has more time in their schedule dedicated for discussion than a standing provider.

Implications for Clinical Practice

Due to the lack of a significant between-group difference, this study contributes to the mixed results of the literature regarding healthcare provider positioning and patient outcomes (Comstock, Hooper, Goodwin, & Goodwin, 1982; Johnson, Sadosty, Weaver, & Goyal, 2008; Pattison, Heyman, Barlow, & Barrow, 2017; Valdes et al., 2003). It seems that these factors are difficult to measure, may be highly idiosyncratic, and could be based on unique patient preferences and contextual parameters. Perhaps music therapists providing PPLM should position themselves however they feel most comfortable based upon what is most natural for the patient's room (e.g., if a seat is available without moving the patient's personal belongings or if the practitioner is most confident in their musical abilities when standing). Ideally, a therapist could ask patients for their preference (i.e., "Would you prefer me to sit or stand while I play music?").

Limitations and Delimitations

The authors advise caution drawing conclusions as a result of this study due to the small sample size and the lack of a significant between-group difference. Other restrictions include the PI's position as both the music therapy practitioner and researcher as well as the lack of follow-up collection to examine any continuity of gained benefits. Additionally, due to the informed consent process, participants knew the purpose of the study and results may have been biased. Another limitation was the setting; although the study took place within the hospital's cardiovascular unit, each patient room was a bit different and some contained foldable chairs while others did not. Therefore, the PI would sit in a chair in some rooms or on the window ledge in others. Finally, two participants were excluded from analysis due to the inability to complete their responses because of either PI error or an approaching medical procedure.

Suggestions for Future Research

In future investigations, researchers could address the limitations of the current study by procuring a larger sample size, including a funded research assistant to collect pre- and posttest data to avoid the effects of the dual clinician-researcher role. Future investigators could also bring a portable stool or folding chair for purposes of consistency and completing follow-up data collection with patients to verify any continuity of treatment benefits. Enhanced therapeutic rapport and trust may result from adjustments to the amount and length of music therapy provided. Interpretivist research models may provide investigators with enhanced understanding of patients' experiences of PPLM – as well as treatment effects and trust in the therapist – delivered in both sitting and standing positions. Finally, future researchers could compare PPLM delivered when sitting and standing and measure the duration, perceptions of the length, and the depth of the interaction between the music therapist and participant.

Conclusion

The purpose of this randomized pilot study was to determine if therapist positioning during music therapy in the form of PPLM influenced the positive and negative affect, pain, and trust of adult patients on a cardiovascular unit. Congruent with results of related healthcare provider literature, results indicated no significant between-group difference between the sitting and standing conditions. Due to the relevance of therapeutic alliance as a predictor of therapeutic outcome, additional research investigating aspects of the music therapist's positioning with patients in various medical settings is warranted to augment patient-centered care within today's emphasis on accountability and objectivist paradigms.

About the authors

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Notes

1. We use the term “patient” as we were in medical hospital.

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Appendix

Song List

Song Title	Artist	Genre
500 Miles	The Proclaimers	Pop
Amazing Grace		Religious
American Pie	Don McLean	Rock
Angel	Sara McLachlan	Pop
Bless the Broken Road	Rascal Flatts	Country
Blowing in the Wind	Bob Dylan	Folk
Brave	Sara Bareilles	Pop
Brown Eyed Girl	Van Morrison	Rock N Roll
Country Roads	John Denver	Country
Danny Boy		Irish Traditional
Don't Stop	Fleetwood Mac	70s
Edelweiss	Julie Andrews	Broadway
Everyday	Buddy Holiday	60s
Hallelujah	Leonard Cohen	Folk
Hey Good Lookin'	Hank Williams/Jimmy Buffett	Rock N Roll
How Great Thou Art		Religious
King of the Road	Roger Miller	Rock
Leaving on a Jet Plane	John Denver	Folk
Let It Be	The Beatles	Rock
My Girl	The Temptations	Oldies
Rainbow Connection	Kenny Loggins	Soundtrack
Ring of Fire	Johnny Cash	Rock N Roll
Take It Easy	The Eagles	Rock

Song Title	Artist	Genre
Three Little Birds	Bob Marley	Reggae
You Are My Sunshine	Davis/Mitchell	Traditional
You'll Be In My Heart	Disney	Disney
You've Got a Friend	Carole King	70s