Full-Length Article

Bridging Music and Military Mental Health: *A Pilot Study Examining Music Interventions in the Military Outpatient Mental Health Waiting Room Environment*

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Abstract

Music is shown to assist in reducing patient anxiety and distress in civilian medical environments. There is a dearth of research, however, examining how music therapeutics impacts patients in a military context. As such, researchers at Naval Medical Center San Diego performed a pilot study examining the effect of music on patients at a military out-patient mental health clinic. Using a quasi-experimental design, with quantitative and qualitative measures, the researchers assessed patient perceived "pleasantness" apropos of an alternating waiting room environment, with the control group being exposed to daytime television and the experimental group being exposed to relaxing music with nature scenes. In total, 149 participants completed the pilot study; 76 participants formed the control group, while 73 formed the experimental group. The results indicate that military out-patient mental health patients are positively impacted by music interventions in their waiting room experience, as revealed by an increase in reported "pleasantness" in the experimental group as compared to the control group. The researchers recommend that further work be performed in comprehending the salubrious effects of music interventions in the military clinical setting.

Keywords: ***military mental health, waiting room experience, music and Outpatient mental health setting.*** multilingual abstract | **mmd.iammonline.com**

Introduction

A vast amount of scientific literature, spanning over 200 years, exists regarding the salubrious effects of music upon mood, stress reduction, pain management, social interaction, and more. Indeed, music has been utilized to assist the "healing" of people since time immemorial. For more than 2,000 years the power of music, as integrated with the medical arts, has been described in myth, legend, and philosophical discourse [1]. Many of the ancient classical societies, as well as innumerable indigenous cultures [1, 2], are known to have used music to perform healing rituals, trance dancing, community bonding, and for the "driving [of] demons out of people's bodies." [3]

Music therapeutics *per se*—as developed in the United States—has its formal beginnings in the need to assist hospitalized soldiers returning home from the battlefields of World War II [3,4]. It was discovered that the playing of music to these returning soldiers, in hospital environments, was beneficial to them on a multitude of levels. In point of fact, Veterans Administration Hospitals served as the veritable first-foundation, the seedbed, for the growth of formal music therapy as a practice and as an academic discipline [4].

In a concentrated review of the literature much can be found to support and justify any investigation involving the use of music within the hospital context. Essentially, and critically, music interventions are non-invasive, and they provide easy access to allow for the fostering of patient well-being. It is suggested by Dileo, and others [5] that the use of patient-focused music interventions by medical personnel, in actuality and on the whole, reduces patient anxiety, pain, and autonomic reactivity thereby improving both patient medical status and patient well-being. Furthermore, listening to music can function to help reduce anxiety in patients awaiting surgical procedures, and other medical encounters [6,7,8]. Waiting room anxiety and distress, whether at the Emergency Room, Radiotherapy waiting room, or Surgery/Intensive Care Unit waiting room has also shown to be reduced by the utilization of therapeutic music interventions, thus providing evidence for music's positive impact on patient mood and well-being [9,10,11].

From the military perspective, though music is most clearly associated with marching songs, ceremonial

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processions, and as preparation for battle—for the triune effects of developing group cohesion, the strengthening of unit morale, and the psychological motivation to face the fear of death [12,13]—music has also functioned with positive results in the clinical milieu in the treatment of Post-Traumatic Stress Disorder (PTSD) and Moral Injury [14], reflecting the early and seminal work of music therapists in the post-World War II era [15,16,17]. Notwithstanding, there remains a dearth of academic work exhibiting music interventions in the Military Treatment Facility (MTF) environment. Thus, since the authors are primarily aware of the exclusive use of PTSD-focused music interventions, this study is meant to add to the general knowledge-base of music interventions vis-à-vis military personnel.

What is more, as a whole the military population remains a unique sociological group with distinct stressors. The inherent stress, and distress, associated with military life provides ample justification for musicological investigations aimed at combating stress.

Rationale and Hypothesis

Patients at Naval Medical Center San Diego (NMCSD) are exposed to a standard form of waiting room experience, that of the simple combination of chairs and daytime television programming. Almost every outpatient clinic at NMCSD offers typical daytime television programming—and often this programming is tuned to television news exclusively. Since the use of television programming, especially news programming, is shown to increase stress in the waiting room milieu [18], the researchers thus endeavored to determine if utilizing music therapy techniques in a military outpatient mental health setting would allow for the general reduction of patient stress and anxiety in the patient waiting room experience. As such, the Social Work Department at NMCSD, in collaboration with NMCSD's Mental Health Department, designed a process improvement project using a quasi-experimental approach to measure the proposed impact of music interventions upon the outpatient mental health waiting room experience.

Methods

The researchers performed a process improvement pilot study using a quasi- experimental design. The setting for this study was the NMCSD's Marine Corps Recruit Depot (MCRD) Outpatient Mental Health Clinic. An experimental group experienced a new waiting room configuration of soft music accompanied by nature scenes, played on television via an HDMI device with prerecorded music tracks and nature imagery. This experimental group was compared with a control group that experienced the regular daytime programming at NMCSD's Marine Corps Recruit Depot (MCRD) Outpatient Mental Health Clinic. Patient waiting room experience was recorded utilizing a numbered 9-point Likert scale that measured subjective impressions ranging from "Very Unpleasant"/-4, to "Neutral"/0, to "Very Pleasant"/+4. Additionally, qualitative information was sought through the use of a "comments" section wherein patients could offer personal reflections apropos of their respective waiting room experiences.

Description of Music

The experimental group was exposed to soft instrumental music accompanied by nature scenes. This music was played on a television by way of an HDMI plug-in device that contained prerecorded music tracks as well as nature imagery. This type of music was chosen by the researchers because of its aesthetic quality, its facility of use, and its dependability. Furthermore, the HDMI device played uninterrupted music tracks with continuously alternating nature scenes, in a 32-hour continuous loop, with ever-changing and diverse soft music tracks accompanied by dynamic real-time nature sequences. The HDMI device was acquired from Healing HealthCare Systems which produces "The C.A.R.E. Channel" (http://www.healinghealth.com/care-channel-relaxation-programming/), relaxation programming specifically designed to enhance various healthcare environments.

Protocol

Assignment to either the experimental or control group was accomplished by alternating data collection procedures every two weeks. The protocol timeline (Figure 1) describes this approach in more detail.

Control (regular waiting room experience)	Experimental (Music w/ Nature Scenes)	Control (regular waiting room experience)	Experimental (Music w/ Nature Scenes
2 weeks	2 weeks	2 weeks	2 weeks

Figure 1: Experimental Schedule

Quantitative Results

149 participants completed the pilot study. Of the 149 participants, 76 completed the assessment from the control waiting room procedures and 73 completed the experimental waiting room procedures. The non-parametric Mann-Whitney U test of independent samples was chosen to determine if there were group differences in the ordinal dependent variable of waiting room pleasantness scores. Distributions of the pleasantness scores for the control and experimental groups were similar, as assessed by visual

inspection. Median pleasantness score was statistically significantly higher in the experimental group (2.0) than in the control group (0.5), $U = 2275.5$, $z = -1.975$, $p = .048$.

These data support that for this particular clinic and population, music interventions with nature scenes have a measurable positive impact on waiting room experience; this is demonstrated by an increase in perceived "pleasantness," vis-à-vis the experience of the waiting room, during the experimental procedures.

Qualitative Results

The patient questionnaires also contained a "comments" section giving patients the option to express qualitative information related to their waiting room experience, and this is in addition to the Likert scale assessment. In analyzing this qualitative data, by way of word and phrase frequency themes, the researchers notice four prominent characteristics apropos of patient responses: 1) Patients supply comments and personal reflections nearly twice as much during the two experimental intervals (total of 4 weeks) as compared to the control intervals. That is, during the control intervals patients provide 20 responses in total; whereas, during the music intervention periods (the experimental periods) patients provide 39 responses *in toto.* 2) Similarly, patients throughout the music intervention are more verbal and expressive than during the control protocols. Patients use 403 words to describe their experiences during the music intervention; and, in contradistinction, patients use only 249 words to describe their experiences during the control periods. 3) Furthermore, patients are more than five times as likely, during the music with nature imagery intervention, to use the adverb "very" to modify an adjective; e.g., patients during the music intervention describe their experiences as "very peaceful," "very calming," "very caring," and the like. 4) Patients use emotional descriptors like calm/peaceful/love/caring over 20 times during the music intervention weeks to describe their waiting room experiences. However, during the control periods patients only use emotional descriptors 4 times. Indeed, throughout the control intervals patients are more apt to describe the physical characteristics of the waiting room, rather than their emotional reactions or affective states.

Examples of patient responses from the control and music intervention (experimental) intervals are as follows:

Control: Small, trouble relaxing, standard, empty, stuffy, common, crowded, CNN playing, cluttered, relaxed, clean, don't want news.

Experimental, Music Intervention: Caring environment, music soothing, peaceful, like ambient music, calming with music playing, enjoy calming music, music annoying, loved calm environment, mind let go, music puts you in a good place, very peaceful now, music is nice, nature and music settling and calm, lower anxiety, comforting.

Discussion

Though the researchers did not explicitly utilize a coding system in this pilot study for patient "stress," *per se*, it is presumed that a nominal correlation between patient-perceived "pleasantness" and patient "stress" can be linked. Namely, the researchers interpret the movement toward increased patient "pleasantness," throughout the music intervention periods, to represent a condition akin to stress reduction in the patient waiting room experience/environment. That is to say, this pilot study forms the rationale-base for a longer and more thorough investigation into general music interventions in the military context, especially as these interventions connect to stress reduction in the military healthcare milieu.

What is more, since the mental health environment constituted the research focus for this pilot study it is recommended, as well, that more detailed work be performed on the military mental health environment vis-à-vis music therapeutics. This population will clearly benefit from alternative means of reducing stress in the waiting room, and perhaps beyond.

We find the connection between music interventions and the use of emotional descriptors to be intriguing, and they envision further research along these lines. For instance, research investigating whether music acts as a doorway, or as a facilitator, to sensing the nuances of subjective and internal human experience may shed light on music's subtle impact on sensation and the ability of music to relieve anxiety and stress.

Moreover, we recommend that future research investigate whether there are differences between types of music and the various types of affective and physiological responses elicited by these differing forms of music. Uncovering the role of ambiance, vis-à-vis music, may prove to be a fruitful avenue for further research too, especially in the military context, revealing more about how environments act as healing agents.

Limitations for this pilot study include the central tendency bias as well as the low number of quantitative scales used to collect objective information. Furthermore, in future, studies will need to more fully describe how the waiting room experience, as supplemented by musical interventions, impacts the general mood and psychology of patients. As mentioned above, more research is needed to determine which aspects of the waiting room environment are most important to improving the patient experience (types of music, level of music, types of visuals, background lighting, ambiance, etc). Once these are understood, the waiting room environment can be further tailored and improved upon thus maximizing positive outcomes. Also, it is necessary to determine which patient populations may benefit most from this type of musically-constructed environment: those with mental health issues that resemble PTSD symptomatology?; or those presenting with a collection of symptoms like anxiety, depression, and/or other symptoms representative of various

psychiatric disorders? This area of study, especially apropos of military contexts, remains promising for the delineation and elucidation of music's impact upon human experience.

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