

Milieu Music Intervention Within a Complex Psychiatric Population
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Abstract

Purpose: This project evaluated staff perceptions of the milieu before and during a therapeutic passive listening music intervention.

Question: What effect does a music intervention have on milieu assessment scores according to the unit staff of an inpatient psychiatric unit serving complex psychiatric patients?

Sample and Setting: The sample consisted of a rotating staff of over 30 dayshift medical professionals in an acute care psychiatric unit that serves both civil and forensic patients.

Measures: The Ward Dropout Scale (WDS) and Ward Discharge Rate Scale (WDRS) (Moos, 1996), were used to assess social indicators within the climate of the milieu.

Method: A one-group pre-test/ post-test design was used to examine if a daily recurring, passive listening music group for complex psychiatric patients affected staff perceptions of the therapeutic milieu.

Procedures: Staff responded to two subscale surveys of the original Ward Assessment Scale (WAS), one week before and then intermittently during the two-week music intervention.

Results: Response trends from the Ward Dropout Scale (WDS) and the Ward Discharge Rate Scale (WDRS) (N=45) were significant. Pre-post survey sample (n=7) results produced a reduction in mean from above the national average (M = 5.47) to below national average (M=5.57 to M= 4.57) on the WDS. Pre-post results from the WDRS indicate no change (M = 6.42 to M = 6.14).

Nursing Implications: Psychiatric mental health nurse practitioners (PMHNP) assigned to care for patients on psychiatric units can implement proactive measures to increase the quality of therapeutic milieus. *Keywords: therapeutic, milieu, music intervention*

Milieu Music Intervention Within a Complex Inpatient Psychiatric Population

Background

Serious mental illness affects approximately one in twenty-five adults (11.2 million) in the U.S. each year (National Institute of Health, n.d.). Serious mental illness, or, SMI, is defined by the severity of mental health symptoms that interfere with or limits one or more major life activities (National Institute of Health, n.d.). SMI significantly contributes to the high cost of medical care in the U.S. as most clients who are diagnosed with a serious mental illness require inpatient psychiatric care. Inpatient tertiary care facilities face strict safety and programming regulations to be accredited. State or federally run facilities face increased pressures for safety, programming and accreditation if they are to receive the Medicare or Medicaid funding for the patient population that they serve (Center for Medicare & Medicaid Services, n.d.). Therefore, mandated safety, staffing, and programming guidelines become a priority for most inpatient psychiatric facilities. Evidence-based, innovative programming that is therapeutic is often challenging to implement and sustain within inpatient psychiatric units in the United States as they consistently face staffing hardships (Weiner, 2018).

Inpatient Treatment for Patients with SMI

Many attributes define the inpatient psychiatric facility within the United States. According to Varcolis, Halter, and Varcolis (2010), key characteristics of inpatient psychiatric units in the United States are 24-hour supervision, a therapeutic milieu with staff support and guidance, development of short-term relationships with staff/providers and structured social activities and programming. Physicians and psychiatric nurse practitioners assigned to inpatient psychiatric units are responsible for medication management, inpatient care plans, discharge planning, and enforcement of unit safety rules. Finally, and, most critically, these practitioners are responsible for maintaining a therapeutic inpatient psychiatric milieu.

The Therapeutic Milieu

Milieu is a word derived from the French language (mi "middle" + lieu "place") and refers to the physical environment and social interactions within the environment (Varcolis et al., 2014). The psychiatric milieu is a dynamic entity affected by the number of clients, the severity of mental illness amongst clients, and the culture of the unit (Ellsworth, Maroney, Klett, Gordon & Gunn, 1971). There are many complex interpersonal and environmental components that contribute to a healthy, therapeutic milieu in an inpatient psychiatric unit. Some of these components are the safety of physical furnishings, the training, and professionalism of the milieu staff and learning/programming options that are offered within the milieu. Critical components of a therapeutic milieu include a consistent schedule and routine for meals, medications/therapies, and well-communicated rules enforced in a therapeutic manner (Varcolis et al. 2010).

It is crucial to incorporate pleasant, therapeutic activities that facilitate patient social engagement with both peers and staff. Katz and Kirkland (1990) reported that the quality of a psychiatric milieu directly contributes to safety measures and therapeutic outcomes for patients. The number of experienced staff available to clients at any given time has a profound impact on the therapeutic nature of the milieu. The experienced staff knows that they must continuously assess and adjust interaction and supervision styles based on the most current population admitted to the unit. When a psychiatric population is complex and often intractably ill, it can become especially challenging to provide a therapeutic milieu that includes quality programming.

Addressing Quality Programming

A collaborative staff model to increase quality programming includes the utilization of nurse practitioner students and medical residents conducting extended training on a psychiatric

unit. Staffing shortages on psychiatric units are becoming an increasing concern for hospital executives across the United States (National Council Medical Director Institute, 2017). Projected scarcity of psychiatrists, psychiatric nurse practitioners, registered nurses, and psychiatric technicians are expected to worsen over the next decade (Weiner, 2018). Meanwhile, medical residents and nurse practitioner students are requesting increased direct patient care experiences. Music interventions, mainly passive listening interventions, are a low-risk therapeutic milieu activity that can be mutually sustained by a team of permanent staff and graduate students.

Problem

Inpatient tertiary hospitalization is often a necessity for destabilized patients with SMI. Personal care management and therapeutic programming within the milieu are essential to the total environment that promotes well-being. Because the milieu is a dynamic entity, it is essential to have activities that will be engaging and meaningful to different types of people with SMI. Finding effective, low cost, and sustainable interventions that enhance the milieu is a worthwhile endeavor. Utilizing resources, such as graduate students that already exist within the inpatient environment, is an ideal solution to provide quality programming options.

Literature Review

A strategic literature search in CINAHL, PUBMED, and PsychINFO resulted in 102 original articles, some of them duplicates. The inclusion criteria for the search were: music therapy, inpatient psychiatric music intervention, music, milieu, and inpatient psychiatric. After the removal of duplicates, titles reviewed, and 95 abstracts screened, 73 articles remained for full-text review. From this full-text review, 48 articles, including 23 original research articles and 25 gray literature articles or meta-analyses, remained for the final analysis. Of the 23 research articles included in the final analysis, seven were randomized by group, and four were

individual participants, 4 were qualitative interviews, four cluster-randomized, three quasi-experimental, and one was a non-randomized cohort study. The gray literature search retrieved 20 relevant articles on the history of music therapy, neuroscience, and, where music therapy fits best within therapeutic psychiatric milieus.

Music-based Interventions in the Healthcare Arena

The healthcare community and society at large accept that emotional and psychological stress harms both physical and mental health. For many decades healthcare research has focused on ways to address emotional stress through different modalities. One modality that has increasingly gained in popularity and empirical evidence is that of contemplative practices. These practices have been found to increase resiliency and effectively decrease human suffering in the general population as well as those admitted to healthcare facilities. Contemplative practices include a wide range of activities, such as deep breathing exercises, yoga, tai-chi, physical exercise, and music therapies (Gerritsen & Band, 2018). Dr. Stephen Porges, the founder of Polyvagal Theory, has studied breathwork, yoga, and other contemplative practices at length. His polyvagal theory has demonstrated how the tenth cranial nerve, the vagus nerve, impacts human responses and how proper engagement of its healing properties can speed recovery from trauma, anxiety, anger, and depression (Porges, 2011). Dr. Porges (2011), along with Dr. Bessel Van Der Kolk (2015), have conclusively demonstrated that some individuals can recover from severely traumatic events and help manage psychiatric conditions with contemplative practices. Music or listening therapies currently exist in a variety of settings within the healthcare arena. Oncology, memory care, stroke units, and inpatient psychiatric units are some of the places where music interventions have been shown to contribute to therapeutic outcomes (Sorgen, 2017).

Improving Milieu Quality Through Music

Research has demonstrated that when people move to music in groups, it increases production of endorphins within the brain and can lead to social bonding (Tarr, Launey & Dunbar, 2016; Valdesolo, Ouyang & Desteno, 2010). Studies have shown that "attentively guided" breathing and/or low vocalization stimulates the vagus nerve promoting a parasympathetic response of relaxation (Porges, 2011; Gerritsen & Band, 2018). By giving clients options to be active in some fashion during a music intervention, results could include: increases in immediate enjoyment, an increase in overall therapeutic engagement, increased feelings of social connection within the group, and, a desire to participate in more upcoming groups (Silverman, 2013a, 2013b; Valdesolo et al., 2010). Also, giving options or choices to individual clients regarding how they can choose to interact or remain passive within a group generates autonomy and promotes self-efficacy within the group. According to Dr. Rudolf Moos (1996), a leading psychiatrist and researcher, building social abilities and autonomy-oriented behaviors improve morale and better long-term well-being after discharge from psychiatric facilities. Dr. Moos (1996) created and validated three versions of the Ward Atmosphere Scale (WAS) and its subscales to assess and monitor new psychiatric unit programming or changes to established psychiatric unit programming.

Dr. Moos states that when psychiatric unit staff work together to create and maintain quality programming and schedules, both recidivism and length-of-time to discharge are reduced for clients (Moos, 1996). Additionally, he found that the standardized examination of programs and unit milieu that the WAS provides gives essential insight into the overall culture and strengths and weaknesses of a particular unit. Moos (1996) is clear in his WAS manual that the dimensions examined: relationships, personal growth, and system maintenance are not to be thought of as "good" or "bad." Instead, he urges investigators to use the information from the

WAS to cultivate a broader picture of the culture within a unit, identify unique strengths and weaknesses, and ultimately task unit stakeholders to decide where slight shifts or more substantial changes in programming are required.

The inpatient psychiatric milieu is a dynamic entity that ideally promotes the preservation of safe, reasonable human interactions as well as a calming ambiance. To this end, music therapy demonstrates how to promote calm, positively affect social-relational abilities and, increase client attendance rates (to prescribed and recommended treatments) in the severely psychiatrically ill (Gold et al., 2013; Silverman & Rosenow, 2013). Using validated tools like the WAS to assess the dynamic milieu while evidence-based interventions are implemented is a simple way to conduct quality improvement efforts on inpatient psychiatric units.

Music-Based Interventions in the Psychiatric Arena

In the psychiatric arena, music therapy is playing an increasing role as a therapeutic agent. The single meta-analysis available on music therapy in the psychiatric population provided substantial insight into the variety of music therapies utilized in inpatient psychiatric care for clients with schizophrenia spectrum disorders as well as the risks and benefits associated (Mossler, Chen, Heldal & Gold, 2011). Mossler et al. (2011) identified research and understanding gaps and recommended ways to address critical elements such as correlations between the length of a music therapy intervention and individual therapeutic outcomes. The authors determined that music therapy and music interventions "as an addition to standard care improves the global state, mental state (including negative and general symptoms), social functioning, and quality of life of people with schizophrenia or schizophrenia-like disorders" (pg. 23-24). Yang et al., (2012) and Silverman (2013) reveal how the right kind of music therapy can positively affect mood and personal affect. These studies determined that notable changes were only for short term periods, as in hours or a single day. However, the specialty of psychiatry

often relies on single moments or single days to produce psychological breakthroughs, or, "pivotal moments" with individuals in order to facilitate long-term symptom recovery (Gavrielidou & O'Dell-Miller, 2016). Jeon, Gang, & Oh (2017) provide original research on how to implement culturally appropriate music therapy in the forensic psychiatric environment in South Korea. They performed a Nanta style (a modern, upbeat style of Korean music based on traditional ancient rhythms) music intervention in a typically subdued psychiatric milieu. They used a non-equivalent control group pre-test, post-test design, measurably improving the psychological well-being of the clients, and producing a calming impact on the milieu. Suzanne Metzner (2010) conducted a case study involving multiple music therapy sessions over several weeks with a single psychotic patient. Her case study identified vital activity transition points during music therapy when unconstructive emotions and discomfort were observed and became predictable within the patient. These "transitional moments" are identified as: during verbal feedback from the therapist, during initiation of and the end of music therapy. As a result of this case study, Metzner recommends that efforts to minimize anxiety or discomfort during those "moments" will likely improve overall outcomes and increase future participation in music therapy activities.

Music Interventions as a Collaborative Practice

Michael Silverman is a prominent music therapist and music therapy researcher who has used an educational approach to music therapy in order to target illness management and recovery. He has used modalities such as lyric analysis, instrument playing, and passive listening in a variety of clinical psychiatric contexts with varying lengths of implementation. He has also used a variety of measurement tools to obtain both qualitative and quantitative evidence that support the use of music therapy. The majority of Michael Silverman's work (2010, 2013, 2014, 2016) demonstrates how subtle changes in the delivery of music therapy can impact personal

affect, emotions, and self-esteem in the severely mentally ill. Many group music therapy interventions proved to be equally effective when compared to other group psychotherapy and long-accepted CBT style therapies (Markovich & Tatsumi 2015; Silverman, 2010, 2013; Grocke et al., 2014). These findings are highly encouraging. Group psychotherapy and CBT are empirically proven methods for treating psychiatric patients in the inpatient environment. Most importantly, Silverman's research provides a backbone of knowledge that supports future investigations. Silverman posits that professional collaboration between music therapists, nurses, nurse practitioners, psychiatrists and psychiatric technicians often provides the most optimal outcomes when delivering music therapy within the inpatient psychiatric environment (Personal Communication, Michael Silverman, June 17, 2019). Music therapy is best completed by a certified music therapist in collaboration with the rest of the healthcare team. It is reasonable to assert that when music therapists are not available in a facility, nurse practitioners and graduate students are capable of applying principles of music therapy to conduct simple music interventions for clients while actively consulting with a certified music therapist.

Music: A Tool for Creating a Restorative Unit

Quality therapeutic outcomes for patients and overall staff retention is attributed to a work environment where providers work directly with and empower both nursing and para-professional staff to actively manage and assess the milieu (Ellsworth et al., 1971; Moos, 1996). Ellsworth et al. (1971), states that when the entire staff of a unit contributes to the design and maintenance of a therapeutic milieu, the result is a more peaceful, restorative milieu for all unit stakeholders. A consistently healthy milieu directly and positively impacts unit staff satisfaction and retention (Ellsworth et al., 1971; Abderhalden, et al., 2006). In summary, the literature supports the introduction of music interventions within the acute-care psychiatric unit. A passive listening intervention is the best option with which to begin, as it is inexpensive and low risk.

Staff and clients are likely to benefit from a music intervention if staff support its introduction, and its delivery is conducted with calm and consistency.

Gaps in the Literature

There is limited evidence that a specific category or style of music is preferable over another within the context of the psychiatric milieu (Warren, 2016). Dr. Michael Silverman (2010, 2014) identified that there has been very little music therapy research done with the SMI population. He cites severity of illness, perception of risk and the complexity of data gathering within this population as reasons for these gaps in the literature (Silverman, 2010). As of the writing of this manuscript, Dr. Silverman continues music therapy research within the SMI population investigating what types of music therapy interventions are the most therapeutic and sustainable with this high-risk population (Silverman, 2010, 2014). The review of literature failed to identify psychiatric nurse practitioners, medical residents or PMHNP students having used music interventions for therapeutic work within the tertiary psychiatric milieu. Finally, there is very little evidence demonstrating collaborative professional work between music therapists and psychiatric care practitioners, particularly in the SMI population.

Music Intervention vs. Music Therapy

This doctorate of nurse practitioner (DNP) project was completed using methods and research that belong to the discipline of music therapy. Music Therapy is defined as: "the clinical and evidence-based use of music interventions to accomplish individualized goals within a therapeutic relationship by a credentialed professional who has completed an approved music therapy program" (American Music Therapy Association, 2019). It is crucial to convey that neither this project nor the intervention are to be defined as music therapy. A leading music therapist (Dr. Michael Silverman) directly consulted with the psychiatric nurse practitioner completing the music intervention, guiding the process from a music therapy perspective, and

helping to maintain the boundary between music therapy and therapeutic music intervention. References to research and methods completed within the discipline of music therapy were utilized. However, for the project and subsequent reporting of the project, the term "music intervention" will be utilized in order to describe the passive listening intervention completed on the unit.

Theoretical Framework

Dr. Hildegard Peplau's interpersonal psychodynamic theory provides the framework for this milieu music project. Peplau's theory on interpersonal relationships proposes that staff, especially nurses, must form positive relationships with patients to be effective healers. She proposed that these relationships took one or combined versions of the following roles within the therapeutic environment: stranger, teacher, resource, counselor, surrogate, or technician (Peplau, 1997). These are considered to be functional healing roles within the milieu. Peplau's therapeutic phases further guide the process of the intervention. They are orientation, identification, exploitation, and resolution. The orientation phase involves making first impressions by both clients and provider and it is the best time to establish boundaries and roles. When the client understands how their needs are met within the rules and boundaries of the relationship or activity, in this case, the music intervention, psychological safety can be cultivated, allowing for personal growth.

The identification phase is when the client is more familiar with therapeutic opportunities and willingly selects people and opportunities within the milieu to aid in their personal growth. The music intervention explicitly supported the ideals of the identification phase by providing a relaxed and welcoming atmosphere. Exploitation refers to the willingness and motivation of the client to take full advantage of the relationship or experience. To this end, the intervention took place at the same time every day for two weeks in the same familiar environment with the same

familiar investigator, setting a reliable stage for participation and full exploitation by clients. Resolution refers to disengagement of the client from the therapeutic environment and culminating in their discharge from the facility to outpatient care. Resolution, within the context of the music intervention was exhibited by the investigator disengaging from the milieu, clients and staff and removing the option of the passive listening music intervention. Therefore, the act of resolution became a task for all parties, the clients, staff and the investigator involved with the music intervention.

Purpose of the Project

The purpose of this quality improvement (QI) project was to implement a passive listening music intervention and assess if it impacted staff perceptions of the inpatient psychiatric milieu.

Methods

Investigative Design

The investigative design is that of a QI project investigating whether a simple music intervention changed the way staff assess quality attributes of the inpatient psychiatric milieu.

Setting

This was a single-site, single-unit investigation conducted on a tertiary care inpatient psychiatric unit located on the east coast of the United States. This unit serves male and female clients from areas within 100 miles of the facility. Some of the clients are forensic clients (legal charges are pending, or, the client is coming from prison) and some are civil clients (not pending any legal charges). All clients are suffering from complex social backgrounds and SMI. Maintaining safety and daily routines are the most aspects of the unit's milieu. Providing staff levels to maintain unit safety and daily routines was a daily challenge. This facility faces the same staffing shortages that many psychiatric facilities around the U.S. are experiencing. Due to the

nature and severity of the illnesses on the unit, violence can and does occur. De-escalation techniques are the primary method for managing such events.

Variables

Independent Variable: Staff assessments

Dependent Variable: Milieu environment

Sample

A convenience sample of 30 staff between the ages of 18 and 80 were recruited to take before and during-intervention WDS and WDRS surveys.

Inclusion Criteria

All permanent inpatient unit staff were recruited equally to assess the milieu regardless of job description. Non-permanent RN and technician staff were included as they made up at least 20% of the daily staffing ratio each day.

Exclusion Criteria

Staff who declined to consent or participate were excluded. Surveys that were not completed were excluded.

Pre-Implementation Phase: Recruitment

Prior to implementation of the music intervention, a convenience sample of staff evaluated the baseline attributes of the milieu using WAS subscales (Appendix II), the Ward Dropout Scale (WDS) and the Ward Discharge Rate Scale (WDRS) (Moos, 1996). The majority of weekday/day-shift staff received an informational presentation about the music intervention at day-shift morning report or on an individual basis. An advertisement about the music schedule was posted where patients and staff could see it. Recruitment incentives such as coffee, appreciation notes and snacks were given. Everyone who was asked to complete the WDS and WDRS participated in a group or individual WDS/WDRS subscale orientation. Consent was

obtained from all of the unit staff through a standardized consent form. All unit dayshift week-day staff were included. Weekday dayshift staff consists of: psychiatrists, social workers, psychologists, registered nurses, licensed practical nurses, psychiatric technicians, security personnel and hygiene technicians.

Implementation

The investigator and at least one nurse or technician sat and observed the room and participants during the music intervention. The milieu music intervention was conducted Monday through Friday for two weeks in the day room following breakfast. The music playlist selections were all instrumental and chosen for relaxing tones and melodies (Appendix C). Music selections were arranged on an iPhone and delivered via Bluetooth speakers. Sessions were conducted over one hour, with an initial 15 minute "settling in" timeframe as clients transitioned from the scheduled meal to the music intervention (See appendix B, for posted schedule and framework).

Procedures

Staff participants completed WAS subscales prior to the music therapy intervention (pre-test) and again during the two weeks of implementation in order to assess any difference in the quality and therapeutic nature of the milieu (post or "during" test). WDS and WRDS pre-surveys were administered to a minimum of eight staff members each day on Monday, Wednesday and Friday the week before the music intervention began. The daily goal for scale completion was set at 8 as an attainable goal after considering staff to patient safety ratios and staff breaks for dayshift. A pre-test/ post-test design was used to assess the effect on the psychiatric milieu after implementing a daily recurring milieu music intervention. The every-other-day (M/W/F) pre and post-test WDS/WRDS scores will be averaged and compared to each other using the simple T-test method. Data collection was dependent on staff participation. Staff were instructed to

answer the questions on the two subscales based on how they viewed the *quality of the milieu on that day*. The music pre-intervention phase began in October 2019 and the intervention ended in November 2019. Data calculations and statistical analyses were completed between February and March 2020.

Measures

The Ward Atmosphere Scale (WAS) is a social climate scale designed by Dr. Rudolph H. Moos (Moos,1996). Dr. Moos asserts that the total design of the therapeutic environment deserves regular assessment and adjustments in order to enable a therapeutic community (TC). A therapeutic community within the milieu emphasizes autonomy, self-understanding, and the comfortable expression of emotions. Moos posits that clients are best able to express themselves if they feel that they are within a TC. He designed the WAS and its subscales to assess for the social climate factors that best promote an open, comfortable and ultimately healing TC. The 3 original WAS forms consist of 100 true and false (T/F) questions. The investigation site IRB committee deemed all three of the original Ward Atmosphere Scales to be too long for staff to complete (100 questions), citing time away from the unit and safety/staff-to-patient ratios as the priority. Fortunately, three subscales of the original WAS exist within Dr. Moos' (1996) published WAS manual.

To assess the music intervention, two T/F subscales were chosen based on the social climate factors for which they were designed to assess. The WAS Dropout Scale (WDS) was designed to assess for patient and staff involvement, mutual support, unit organization and program clarity (how clients perceive the programs and unit routines). The WAS Discharge Rate Scale (WDRS) was designed to assess client satisfaction, unit organization, clarity of unit policies and practical orientation (how/if the unit make sense to clients) to the unit. The WDS and the WDRS both address relationship, personal growth and systems maintenance (within the

unit) dimensions. Evidence shows that each of these dimensions can potentially to be impacted by a music intervention (Dietrich, Kate, Prout, Boyer & Yoder, 2016; Mossler, Chen, Heldal & Gold, 2011) The simplicity of the T/F design was also a factor in using it in the study with each scale taking less than 5 minutes to complete.

A post-intervention goal identified is to use WDS and WDRS assessment data to steer future quality improvement initiatives aimed at improving the milieu environment and other patient well-being indicators. Also, patterns in staff responses are likely to show the social and system dimensions that staff agree and disagree are present on the unit. The WDS and WDRS were administered to a minimum of 8 staff members on Monday, Wednesday and Friday the week before the music intervention commenced. This number was chosen after considering patient participation rates against required staff to patient ratios for the psychiatric unit during dayshift. From this, a total of 45 surveys (WDS and WDRS before and after) were collected. Matching pre and post-test scale scores were compared to each other using the simple T-test method. Data collection was dependent on staff participation.

Reliability

The WAS scales were created to address a variety of broad social constructs within the treatment programs (Moos, 1996). The final scales were designed to have low or moderate intercorrelations (average intercorrelation: 0.25) allowing the separate subscales to measure different characteristics of treatment programs. A study by Rossberg & Friis (2003) suggested that the WAS would have improved psychometric properties if 16 items were removed and several of the questions were “modernized”. Rossberg & Friis (2003) also surmised that the outdated language used within the scales led the psychometric properties to be marginal. All of this was considered when choosing the WAS tools for the music intervention study. The WAS scales chosen (WDS, WRDS) provide beneficial insight into key social environment attributes.

They are also succinct, allowing staff to complete them quickly without compromising unit staffing. Finally, evidence shows that the climate of the milieu and programming within the milieu is consistently related to patient outcomes such as dropout and discharge rates (Moos, 1996; Gavrielidou & Odell-Miller, 2016), both of which are of interest to the supervisory and administrative staff of the investigation unit.

Protection of Human Subjects

This study received dual IRB approval from the UVA Health Science Research IRB and the study site IRB board. UVA IRB approval was strictly contingent on the approval of the site IRB. Due to the vulnerability of the population served at the study's inpatient unit, it was deemed the most responsible option to not collect any data from patients and the project would be strictly implemented as a quality improvement project.

Data Analysis and Statistical Methodology

The WDS and WRDS surveys were used to assess the quality of the inpatient milieu on the days that the staff were directly observing the milieu. Pre-intervention and during intervention responses were compared using simple paired t-test comparison. Analyses of the data were conducted with IBM SPSS Statistics version 24 for Mac. Significance for all tests was set at the $\alpha = 0.05$ level of significance. Pre and during interventions scores were analyzed by individual question. Bar Charts represent the differences in the way that the questions were answered. Fischer's exact test was used to determine significance of these differences.

Statistical Methodology

The WDS and WRDS scales are scored on a simple point-based system. Moos (1996) provides a score sheet denoting when a response receives a point for T or F answer. The WDS scale gives a point when the T/F response identifies the applicable correlation with any of the four items: staff involvement, staff support, organization of unit and clarity of unit/programming.

The WRDS scale gives a point when the applicable T/F response is given for the following for items: satisfaction, organized unit, clear policies and practical orientation. Moos (1996) provides the mean scores and standard deviations for the output of 160 previous Dropout and Discharge Rate scales (Appendix A) The means and standard deviations from the music intervention study will be compared to the averages of these previous 160 studies.

Results

The purpose of this research was to examine if a daily passive music intervention had any effect on unit staff's perception of the milieu. The research hypothesis states that a music intervention will change the way that unit staff perceive the therapeutic milieu. Evaluating pre and post music intervention WDS & WDRS mean scores was the goal for evaluating any possible impact of the music intervention on the unit. Additionally, comparing the research unit WDS & WDRS scores to unit mean scores from 160 other similar units from around the United States (Moos, 1996) provides insight into how the unit compares with 160 similar units.

Overall results indicate that there was not a statistically significant difference between pre and post WDS & WDRS mean scores as determined by a paired t-test. Pre-post survey results determined a positive change in the average score of the WDS, indicating a positive effect on the milieu of the unit. The mean (with standard deviation in parenthesis) WDS score of 160 other similar U.S. inpatient psychiatric units was 5.47 (1.52). A score closer to the mean is better, while higher than the mean can indicate a greater presence of negative attributes within the setting. Prior to the music intervention, the unit's mean WDS score was 5.57 (3.409), placing it above the national average. After the music intervention was implemented, the mean WDS score was reduced to 4.57 (2.760), well below the national average and indicating an improvement. However, the improvement of the score during the intervention was not found to be statistically significant $p = (.50)$. The national average WDRS score is 7.92 (0.84) (closer to the mean is

better, higher mean scores indicate greater presence of unit/milieu discord). Prior to the music intervention the unit's mean score was: 6.42 (1.133). The mean score after the intervention was 6.14 (0.69), indicating very little change in the WDRS score.

Summary of Findings

Overall, there was no significant difference noted from either the WDS or WRDS before and during surveys. There were some patterns observed in total (N=45) responses to specific questions on the WDS and WRDS. Questions on the WDS and WRDS scales addressing relationship dimensions received the highest percentage of consistent answers from staff. Ninety-three percent, ninety-two percent and ninety-six percent of staff answered exactly the same on three questions designed to assess relationship dimensions (support from both staff and patients, how active patients are in the program, how much patients/staff feel they can express true feelings). Alternatively, there was little consistency in staff responses (52% and 56% respectively) on two questions that were designed to address personal growth and systems maintenance on the unit. The percentage rates of consistent or inconsistent staff responses provides crucial insight into relationship, personal growth and system maintenance dimensions that they were designed to address. This information can be used to examine strengths (where staff agree) and weaknesses (where staff do not consistently agree) on the unit and make subsequent programming decisions to change (or keep) aspects of the milieu culture and programming to better support the clients.

Confounding factors of note are that when the investigator was conducting the music intervention on the unit, she was viewed as additional staff. The simple presence of additional staff is known to impact general quality of any milieu.

Discussion

For many decades healthcare research has focused on ways to effectively address emotional and environmental stress for a variety of populations through different modalities. Contemplative practices such as this passive music listening intervention, have been found to increase resiliency and effectively decrease human suffering in the general population as well as those admitted to medical facilities. Research has demonstrated that when people move to music in groups, it increases the production of endorphins within the brain and can lead to social bonding (Tarr, Launey & Dunbar, 2016; Valdesolo, Ouyang & Desteno, 2010). Studies have shown that "attentively guided" breathing and/or low vocalization stimulate the vagus nerve and in turn, promotes parasympathetic response of relaxation (Porges, 2011; Gerritsen & Band, 2018).

Clients were given these options to be active in some fashion during the music intervention and the investigator modeled appropriate social behaviors during the intervention. A palpable calming effect was achieved and noted verbally and in writing from staff members. Qualitative surveys were given to staff after the completion of the study. Only 3 out of 30 qualitative surveys were returned, likely due to time constraints on the staff. Table 5 shows the results and comments of the qualitative surveys. The reported qualitative effect is hard to quantify and is not directly reflected in the WDS and WRDS survey mean comparison data. It was not possible to directly determine improved social behaviors or feelings of personal connection due to the brevity of the intervention and limited nature of the data that was gathered.

Most notable were the answers to the WDS and WDRS questions that did not change from the pre to post surveys. Moos (1996) indicates that when there is a majority of staff answering in a similar fashion, this gives great insight into attributes of the milieu. For the research unit, the Observed trends from total survey responses (N=45) indicated that the vast

majority of staff (93%) feel that staff show a great deal of support for patients and go out of their way to help them. The vast majority of staff (90%) also agree that staff act on patients' suggestions, demonstrating a unit that focuses on encouraging patient autonomy. Another majority of staff (92%) agree that patients are actively prepared for release from the program and are strongly encouraged to plan for the future. Alternatively, only about half of staff (52%) agree that staff ask patients questions about their own personal problems indicating that there is little focus on individual patient issues. These social and systems indicators are neither positive nor negative, rather when they are assessed as an aggregate, these indicators are suggestive of the nature of the milieu culture of this particular unit. Summary and analysis of these indicators will be issued to the unit where the music intervention took place.

Music Interventions in the Psychiatric Arena

In the psychiatric arena, music therapy is playing an increasing role as a therapeutic agent. The single meta-analysis available on music therapy in the psychiatric population provided substantial insight into the variety of music therapies utilized in inpatient psychiatric care for patients with schizophrenia spectrum disorders as well as the risks and benefits associated (Mossler, Chen, Heldal & Gold, 2011). Mossler et al. (2011) identified research and understanding gaps and recommended ways to address critical elements such as correlations between the length of a music therapy intervention and individual therapeutic outcomes. The authors determined that music therapy and music interventions "as an addition to standard care improves the global state, mental state (including negative and general symptoms), social functioning, and quality of life of people with schizophrenia or schizophrenia - like disorders" (pp. 23-24). Like other tertiary psychiatric units around the country, the patient population on the investigative unit was in constant flux, averaging 4-5 new admissions and discharges per week (Personal Communication, Rhonda Ford, LCSW, 2 March 2020). Daily staffing of the

investigative unit was always changing due to the need for floating staff between units. While quantitative data was not gathered on the patient experience, it was most clear that many clients had become, at minimum, interested and expectant of the music intervention as a part of a new routine and provided so continuity of programming when staff levels and subsequently other activities changed.

After the intervention concluded, marking the resolution of the music and music-investigator relationship, many patients expressed sadness that “morning music” was gone. Others asked when “the music lady” was coming back, “it made things nice around here”. Some staff communicated via written and verbal responses that they would have liked the music intervention to continue because “patients were calmer” and “patients viewed it as therapeutic for them”.

Implementation of low-risk, low-cost and arguably milieu-modulating music interventions have the potential to meet the needs of many stakeholders within the tertiary psychiatric facility serving a complex SMI populations. Passive listening music interventions such as the one conducted during the investigation, are inexpensive and are easily conducted by psychiatric nurse practitioner students and medical residents completing clinical rotations at tertiary care facilities. When there are many patients with SMI within a single milieu, as is common for state-run psychiatric facilities, maintaining a therapeutic milieu is particularly difficult. Patients’ symptoms and behaviors are sometimes unpredictable, frequent occurrences of rapid irritability, loud emotional or physical reactions are commonplace. Clinical practitioners, nurses, and para-professional staff must work cohesively to provide the optimal environment by continually evaluating the physical and emotional climate of individual clients and the milieu as a whole. If a simple music intervention has the potential for relieving some of the modulating burden within the milieu, staff and patients are sure to benefit to some degree.

Threats to Validity

Threats to internal validity for this music intervention study include constraints of single-site, limited timeframe and consisting of a single cohort. Additionally, it is difficult to discern how much the presence, and subsequent “up-staffing of the unit” by the investigator affected staff perceptions of the milieu quality. The pre and during surveys were the exact same survey, measuring identical data. However, the original design of the study was for a paired t-test and many staff lost their number-matching after surveys resulting in the final population with comparable within groups $N = 7$. Total response rate was 45 surveys 7 pairs matched, 31 single un-matched surveys. If there had been a greater number of matching before-after surveys, data may have yielded more statistically significant results. Finally, the constant flux of assigned unit staff floating on and off the research unit on a daily basis affected all staff’s ability to reliably evaluate the milieu. External validity was most notably affected by convenience sampling.

Strengths and Weaknesses of the Design

The major weaknesses of this study pertain to its overall lack of external validity due to convenience sampling. Staff and patient turnover as well as the range of severity of mental illness in the acute care inpatient psychiatric arena impacted milieu attributes in immeasurable ways. Survey return rates were affected by staff time limitations.

Implications for Psychiatric Nurse Practitioners

Clinical practitioners assigned to prescribe and manage the full spectrum of care for severely ill psychiatric patients, are also responsible for the management of the psychiatric milieu. Due to the nature of their jobs, they rarely have the opportunity to observe or assess the daily milieu (Personal communication, Dr. Nathan Ellis July 6, 2016; Dr. Eugene Simopoulos, October 13, 2018). Opportunities for providers or surrogates of the provider role (i.e., medical residents, senior medical students and nurse practitioner students) to engage with patients via an

established music intervention has the potential to benefit quality improvement efforts within the milieu (Hall, Mullen, Plummer, Berry & Clancy, 2019).

Psychiatric facilities facing staffing issues can view graduate students as resources who want to help clients directly and learn in an integral and therapeutic manner. DNP prepared nurse practitioners are trained to creatively address institutional quality improvement efforts while also limiting personnel and financial burdens. They are also trained to be leaders who can collaborate outside of their specialty in order to meet the needs of clients and supporting staff. This music intervention was designed around the premise of nurse practitioner leadership and inter-disciplinary collaboration. A major goal was to positively impact the milieu on a complex psychiatric unit, while limiting personnel and financial burdens to the facility in which it took place. A post-intervention goal identified is to use WAS assessment data to steer future quality improvement initiatives aimed at improving the milieu environment and other patient well-being indicators.

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Appendix A

Table 1.

Ward Dropout Scale Mean (Standard Deviation) as Compared to U.S. Psychiatric Facility (160)

Mean

Scale	Number Items	U.S. Staff Mean (SD)	Before Music Intervention Staff Mean (SD)	After Music Intervention Staff Mean (SD)
Ward Dropout Scale (WDS)	15	5.47 (1.52)	5.57 (3.409)	4.57 (2.760)

Table 2.

Ward Discharge Rate Scale (Standard Deviation) as Compared to U.S. Psychiatric Facility (160)

Mean

Scale	Number Items	U.S. Staff Mean (SD)	Before Music Intervention Staff Mean (SD)	After Music Intervention Staff Mean (SD)
Ward Discharge Rate Scale (WDRS)	14	7.92 (0.84)	6.42 (1.133)	6.14 (0.69)

Table 3.

Agreement (Consistency Rates) of Staff on Social/System Dimensions of the Unit Milieu on the Ward Dropout Scale (WDS)

WDS Relationship, Personal Growth and System Maintenance Dimensions Addressed	Consistency of Staff responses (Agreement) Percentage Rate
1: Autonomy (Personal Growth)	90%
2: Anger and Aggression (Personal Growth)	73%
3: Order and Organization (System Maintenance)	80%
4: Anger and Aggression (Personal Growth)	70%
5: Order and Organization (System Maintenance)	80%
6: Order and Organization (System Maintenance)	86%
7: Involvement (Relationship)	83%
8: Order and Organization (System Maintenance)	56%
9: Program Clarity (System Maintenance)	66%
10: Involvement (Relationship)	60%
11: Personal Problem Orientation (Personal Growth)	50%
12: Order and Organization (System Maintenance)	70%
13: Support (Relationship)	93%
14: Autonomy (Personal Growth)	70%
15: Personal Problem Orientation (Personal Growth)	70%

Table 4.

Agreement (Consistency Rates) of staff on Social/System Dimensions of the Unit Milieu on the Ward Discharge Rate Scale (WDRS)

Ward Discharge Rate Scale Relationship, Personal Growth and System Maintenance Dimensions Addressed	Consistency of Staff responses (Agreement) Percentage Rate
1: Practical Orientation (Personal Growth)	64%
2: Support (Relationship)	76%
3: Spontaneity (Relationship)	88%
4: Involvement (Relationship)	72%
5: Practical Orientation (Personal Growth)	92%
6: Anger/Aggression (Personal Growth)	84%
7: Involvement (Relationship)	92%
8: Practical Orientation (Personal Growth)	76%
9: Spontaneity (Relationship)	96%
10: Practical Orientation (Personal Growth)	76%
11: Personal Problems Orientation (Personal Growth)	52%
12: Staff Control (System Maintenance)	72%
13: Practical Orientation (Personal Growth)	72%
14: Program Clarity (System Maintenance)	80%

Table 5. *Music Intervention Qualitative Responses from Unit Staff*

Question: Was the music intervention helpful to the overall milieu?	
Answers:	
Yes, I noticed a big difference in the milieu during that hour	3
Yes, noticed a small difference in the milieu during that hour	0
Maybe, but it was a little hard to get used to	0
I wasn't here while it was being done/explained/ or before it started	0
No, it wasn't helpful to the Milieu	0
Question: Was the music intervention helpful to patients?	
Answers:	
Yes	3
No	0
I am not sure	0
Question: Do you think music should be a part of the unit Milieu on a regular basis?	
Answers:	
Yes	3
No	0
Question: What can/should be done differently next time? (free text)	
"Be here longer"	
"Try different music as per patient preference"	
Free Text Comments:	
"The patients were more calm and relaxed"	
"Some patients asking for morning music because they think it is therapeutic for them"	

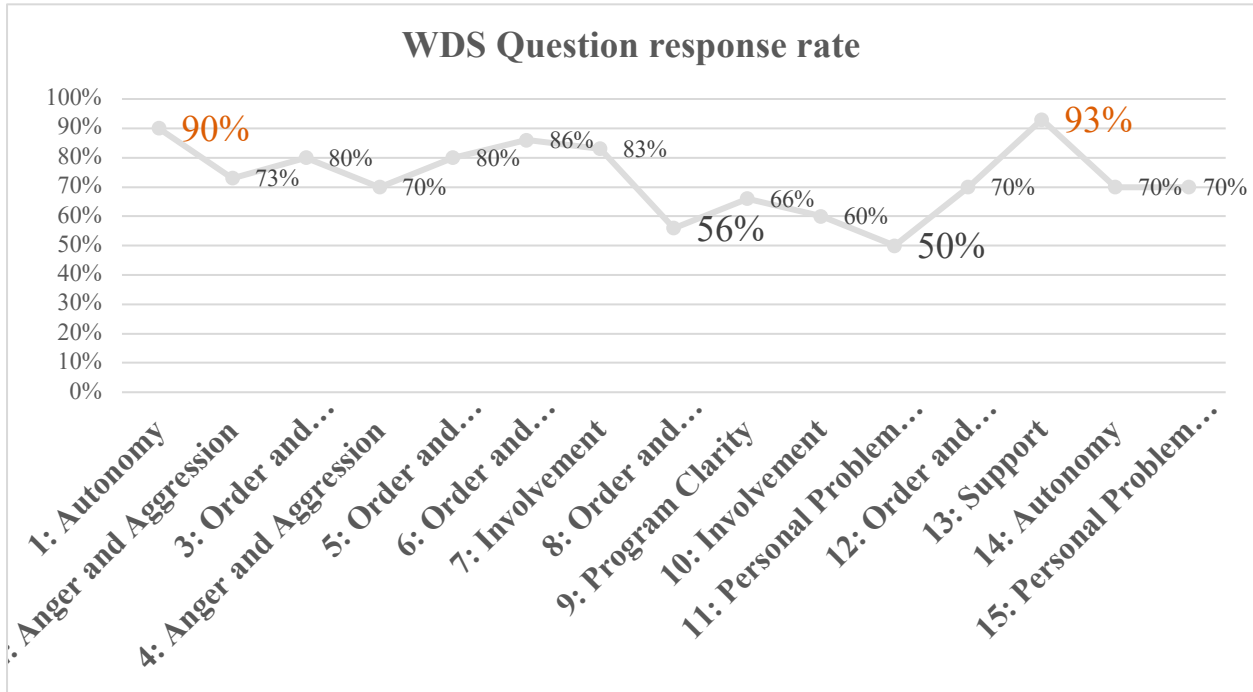


Figure 1. Graph of Staff Agreement/Consistent Response Rates on the Ward Dropout Scale

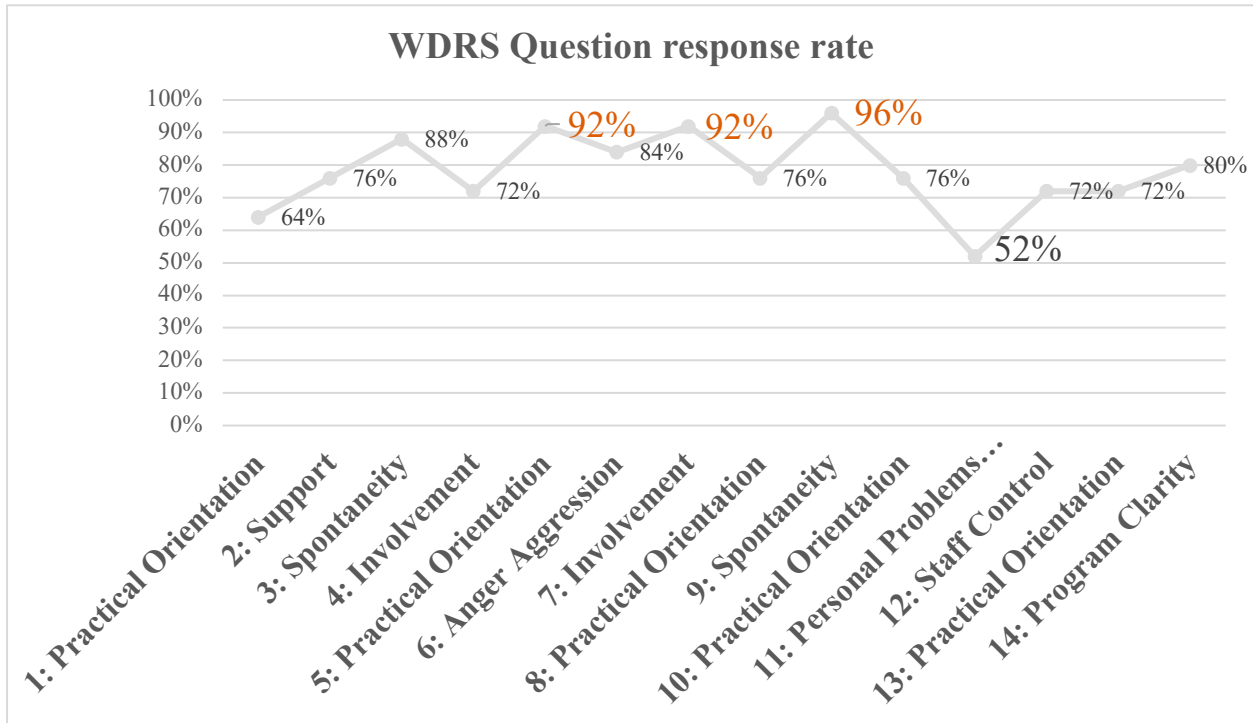


Figure 2. Graph of Staff Agreement/Consistent Response Rates on the Ward Discharge Rate Scale

Appendix B.



Article Flow Diagram (Modified PRISMA Flow Diagram)

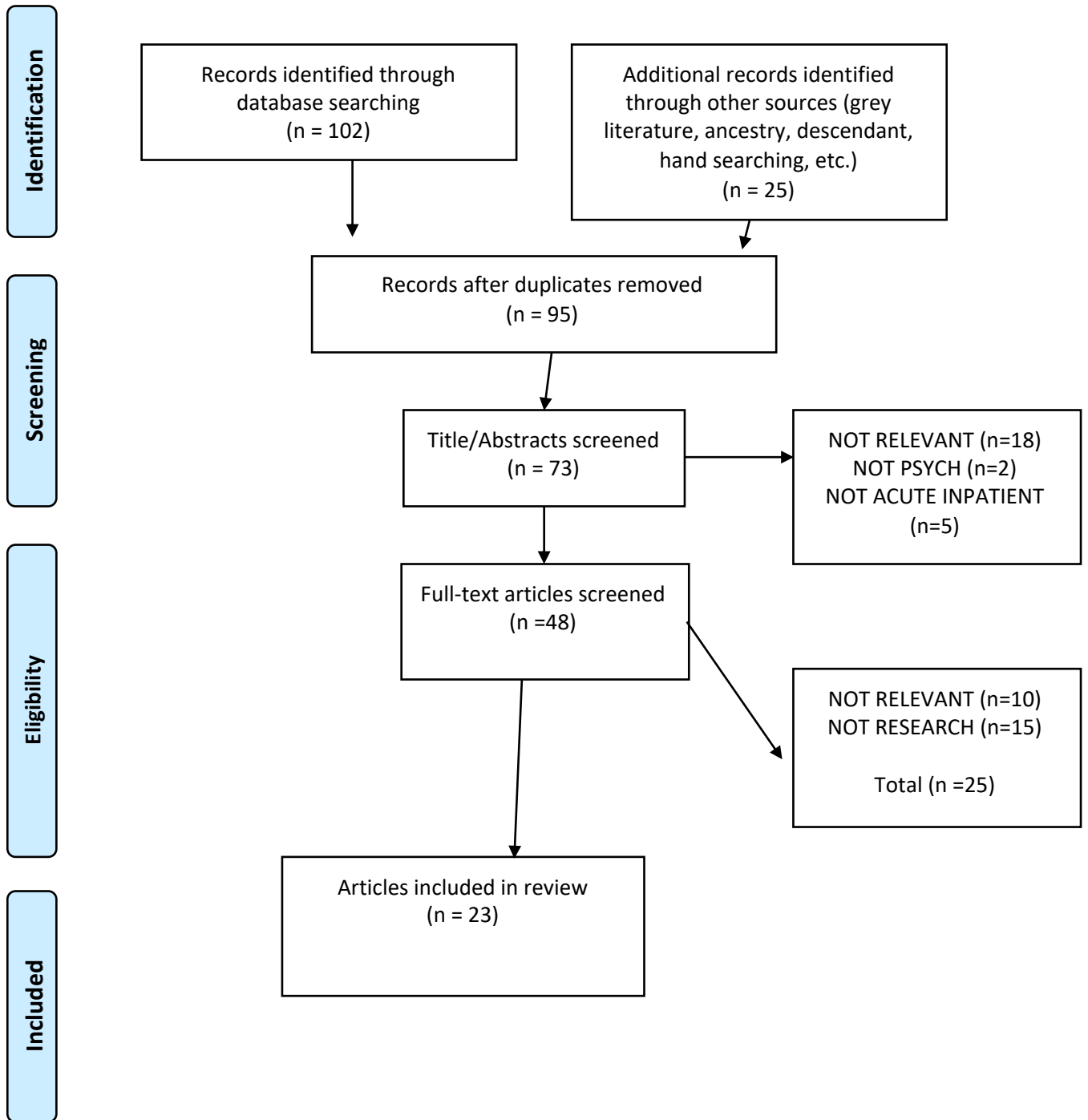


Table 1.

Review of Grey Literature

Author	Title	Journal	Year	Essential Characteristics	Website	Relevance
Erica House, Jessica Arruda, Frank Andrasik, Licia Grazi	The Reliability and Validity of the Visual Analog Mood Scales in Non-English-Speaking Pain Patients	Pain Practice	2012	VAMS Scale that measures emotions	https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1533-2500.2012.00544.x	A viable scale specifically for Music Intervention
Eric Nopanen	The Powerful Effect of Music on the Brain	Tabernacle Choir	2018	Boosting Brain Power	https://www.thetabernaclechoir.org/articles/the-powerful-effect-of-music-on-the-brain.html	How music impacts mood, memory, stress relief
Molly Warren	The Impact of Music Therapy on Mental Health	NAMI	2016	How to use music in mental health settings	https://www.nami.org/Blogs/NAMI-Blog/December-2016/The-Impact-of-Music-Therapy-on-Mental-Health	Experienced music therapist examines 4 different methods
Laura Writes	How Does Sound and Music Affect Our Brain: A Guide to Music's Psychological Triggering of Emotions	Hubpages;	2016	Clinical Brain Characteristics	https://hubpages.com/education/The-Effect-Of-Music-On-The-Brain	Mapping the parts of the brain that music impacts
Peter Rubin	How Does Music Affect Your Brain? Every	WIRED	2019	The Route music takes through the sensory system	https://www.wired.com/story/tech-effects-how-does-music-affect-your-brain/	Information helpful for educating staff and clients about music on the experimental unit

	Imaginable Way					
Ashford U. Staff	How Does Music Affect Your Brain? Ashford University	Ashford University	2017	How music brings joy and positive emotions	https://www.ashford.edu/online-degrees/student-lifestyle/how-does-music-affect-your-brain	Positive emotions for all populations can be elicited by different types of music
Charles Limb, MD	featured in Wired Magazine's "How Does Music Affect Your Brain? Every Imaginable Way"	UCSF	2017	The career and opinion of an MD studying music and the brain	https://ohns.ucsf.edu/news/charles-limb-md-featured-wired-magazines-how-does-music-affect-your-brain-every-imaginable-way	Educating staff about who did the neuroscience
Dean, Alban	Music improves brain health and function in many ways, smarter, happier more productive at any age. Listening is good, playing is better.	BE Fit Brain	2019	The most recent article on positive aspects of Music and the brain	https://bebrainfit.com/music-brain/	How music affects the brain
Trimble Michael, Hesdorffer Dale	Music and the brain: the neuroscience of music and musical appreciation	BJPsych International	2017	Why Musicians have "healthier", more connected brains	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5618809/	Neuroscience explaining benefits of active/passive music
Carol Sorgen	Music Therapy Provides 'Visceral' Experience in Patients	Psychiatric News	2017	The History and development of Music and Medicine/Mental Health	https://psychnews.psychiatryonline.org/doi/abs/10.1176/appi.pn.2017.9b1	Music and the mind, resiliency, creativity

Nandini Chatterjee	The Brain on Music	Resonance	2018	What is happening chemically in the brain on music	http://link.springer.com/10.1007/s12045-018-0619-x	Long read on many aspects of brain and auditory paths
Montánchez Torres, Ramos, Martinez-Suarez, Alonso Garcia, Torres Mendoza	Benefits of Using Music Therapy in Mental Disorders	Journal of Biomusical Engineering	2016	Emerging science and Music Therapy as an actual discipline	https://www.omicsonline.org/open-access/benefits-of-using-music-therapy-in-mental-disorders-2090-2719-1000116.php?aid=76546	Global + psychosocial Functioning and music
Lawton, Georgina	How Music Affects Your Concentration	Bustle	2019	The distinct way that certain music can help concentration	https://www.bustle.com/articles/199972-how-music-affects-your-concentration-according-to-science	Music and the general population, concentration
Klosowski	How Music Affects the Brain and How You Can Use It to Your Advantage	Lifehacker	2019	General Population information on brain/Music	https://lifehacker.com/how-music-affects-the-brain-and-how-you-can-use-it-to-y-5865032	How to use music for increasing performance in cognitive or “life” tasks.
Baker, By Mitzi	Music moves brain to pay attention, Stanford study finds	News Center	2007	Using symphony music/EEG/fMRI to study the brain	http://med.stanford.edu/news/all-news/2007/07/music-moves-brain-to-pay-attention-stanford-study-finds.html	Using music to help the brain transition subjects or pay more attention to tasks
Ansdell, Davidson, Magee, Meehan, Proctor, Simon	From “This F***ing life” to “that’s better” ... in four minutes: an interdisciplinary study of music therapy’s “present moments” and their potential for	Nordic Journal of Music Therapy	2010	Collab psychiatric professionals and Music professionals	https://doi.org/10.1080/08098130903407774	How a person’s affect is affected by music intervention w/measure

	affect modulation					
Allen, Margaret	People who deeply grasp the pain or happiness of others also process music differently in the brain	SMU Research	2019	Music impacts people in different ways; can be used for Individuals with psychosis, behavioral problems, social dysfunction	https://blog.smu.edu/research/2018/06/11/people-who-deeply-grasp-the-pain-or-happiness-of-others-also-process-music-differently-in-the-brain/	Empathic people process music differently than others less oriented to others emotional states
Abderhalden, Needham, Dassen, Halfens, Haug, Fischer	Predicting inpatient violence using an extended version of the Brøset-Violence-Checklist: instrument development and clinical application	BMC Psychiatry	2006	Measuring tool for milieu, predicts violence	https://doi.org/10.1186/1471-244X-6-17	Can be used to evaluate the milieu before/after music
Mossler et al.	Music therapy for people with schizophrenia and schizophrenia-like disorders	Cochrane Review	2011	How to use music in mental health settings especially in the inpatient psychiatric arena, best practices	entire issue	Meta-Analysis of 8 studies. Identifies successes in music therapy and the gaps in the literature; overall supports the burgeoning discipline
Carr, Catherine, Odell-Miller, Helen, Priebe, Stefan	A Systematic Review of Music Therapy Practice and Outcomes with Acute	Plos One	2013	40 years of music therapy; different structures and types, not one identified	n/a	Multiple Music Therapy Studies

Adult Psychiatric In=Patients			best for inpatient use		
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Table 2.

Review of Literature

Author	Title	Sample	Sample Size N=	Intervention style and Rating (1-5)	Why article is valuable to AIMS of investigation	Intervention
Silverman Michael (2017)	Music Therapy for Coping Self-Efficacy in an Acute Mental Health Setting: A Randomized Pilot Study	Acute Mental Health Unit Adults	92	Randomized (1)	Compares the use of lyric analysis, educational song-writing in the acute inpatient setting	3 single sessions as a group, 1 hour each week
Silverman Michael (2016)	Effects of Educational Music Therapy on State Hope for Recovery in Acute Care Mental Health Inpatients: A Cluster-Randomized Effectiveness Study	Adults, Inpatient Psych unit	169	Cluster Randomized (2)	How music therapy was used inpatient, all modalities same as other group therapy methods used; equally effective	1 single session for each group
Silverman Michael (2014)	Effects of Live Educational Music Therapy Intervention on Acute Psychiatric Inpatients' Perceived Social Support and Trust in Therapist	Adults, Inpatient Psych unit	96	Cluster Randomized (2)	3 different educational and music modalities were used, 1 control just education, no difference between the educational and music group. Well rated not quantitative, qualitative results	1 single session for each group
Silverman Michael (2010)	Perceptions of music therapy interventions from inpatients with severe mental illness: A mixed-	Adults, Inpatient Psych unit	67	Qualitative (5)	Which Music Intervention do you like better? Article focused on individuals, They provide insight into their experiences what might work best. All were enjoyed similarly, equally therapeutic	3 single sessions

	methods approach.					
Tanya Louise Hall, Antony Mullen, James Plummer, Sherman Berry, Richard V. Clancy (2019)	Sound Practice: Exploring the benefits of establishing a music group on an acute mental health patient unit	30 patients and staff (18 staff)	30	Qualitative (5)	Using music therapy when you do not have a certified music therapist, well-liked but executed poorly. Not scheduled to suit established patient/staff patterns and not well advertised.	15 focus groups over 6 months, 30 minutes each
Felicity Baker, Michael Silverman, Raymond MacDonal d (2016)	Reliability and Validity of the Meaningfulness of Songwriting scale MSS) with Adults on Acute Psychiatric and Detoxification Units	Inpatient Psych and Detox patients (39/108)	147	Testing a scale for music therapy	Creation/valid. (if validated in 2019 could use)	1 Single Session for individuals and groups to test a scale that can be used in the future to quantitatively rank music therapy interventions
Morgan, K., Bartrop, R., Telfer, J., Tennant, C. (2011)	A Controlled Trial Investigating the effect of music therapy during and acute psychotic episode	60 psychotic participants	60	Quasi-Experimental (2)	Music impacting Psychotic patients, passive music may work better due to the illness and how it affects the brain.	1 single Session of passive music for groups
Metzner, Suzanne (2010)	About Being Meant: Music Therapy with and Inpatient Suffering from Psychosis	A Single Case Study, Adult with Psychosis		Case Study/Qualitative (3)	Psychoanalytic and Musical Approach during psychosis	Multiple sessions with one single patient over weeks, documenting how he felt about the intervention in his words
Silverman Michael (2016)	Effects of Educational Music Therapy on Illness Management and Mood State in Acute Psychiatric Patients: Randomized Three Group Study	Randomized by Group	98	Randomized (1)	slightly better mean scores on mood state than the waiting list. Noted to be "enjoyed", no long-term data, no data indicating how it affected Milieu or patients days/weeks later	Multiple sessions with intervention group over 2 weeks, control group was "waiting"

Yang, Chen, Chu, Chen, Lee, Chen, Chou (2012)	The effect of music therapy on hospitalized psychiatric patients' anxiety, finger temperature, and electroencephalography: a randomized clinical trial	Randomized Clinical Trial	24	Randomized 12/12 (1)	Best fit for site, multiple sessions, randomized, well-supervised controlled	11 Sessions same time of day
Volpe, Giaonoglio, Autiero, Marino, Facchini, Muchi, Galderisi (2018)	Acute Effects of Music Therapy in Subjects with Psychosis During Inpatient Treatment	Quasi-experimental	61	Quasi-randomized (2)	Had a statistically significant reduction of BPRS and CGI scores	Multiple sessions with experimental group over 2 weeks
Jeon, Gang-sook, Moonhee, Gang, Kyongok Oh (2017)	The Effectiveness of the Nanta-Program on Psychiatric Symptoms, Interpersonal Relationships, and Quality of Life in Forensic Inpatients with Schizophrenia	Quasi-experimental	38	Nonequivalent control group (3)	Focused on psycho-social intervention with forensic psychiatric population	12 sessions once a week
Silverman and Romanow (2013)	Immediate quantitative effects of recreational music therapy on mood and perceived helpfulness in acute psychiatric inpatients: An exploratory investigation	Quasi-experimental	41	Random selection to groups (3)	Quick mood scale assessed both passive and active listening interventions	30 sessions
Silverman Michael (2013)	Effects of music therapy on self- and experienced stigma in patients on an acute care	Cluster Randomized	83	Cluster Randomized (2)	Rates different passive and interactive methods in the inpatient environment	Single session

	psychiatric unit: a randomized three group effectiveness study					
Silverman Michael (2013)	Effects of group songwriting on depression and quality of life in acute psychiatric inpatients: A randomized three group effectiveness study.	Cluster Randomized	105	Cluster Randomized (2)	Song-write/psychoeducational/passive music interventions. Findings indicate all had equally significant therapeutic effect	1x sessions with multiple groups at different times
Silverman Michael (2009)	Effect of single-session psychoeducational music therapy perceptions of psychiatric patients	Quasi-experimental	105	Cluster Randomized (2)	Effective when other means were not	Lack of clarity; it was not standardized, pages missing from study obtained
Peng, Kuo, Ko (2010)	Effect of group music activity as an adjunctive therapy on psychotic symptoms in patients with acute schizophrenia.	Randomized Clinical Trial	68	Random selection to groups (3)	Examining effects of Music on Psychosis Scores using Brief Psych Rating Scale	5 sessions in experimental over 1 week
Markovic h, Tatsumi (2015)	The effects of single-session music therapy interventions in comparison with a cognitive behavioral intervention on mood with adult psychiatric inpatients in an acute-care setting: A quasi-experimental trial.	Quasi-experimental	28	Random selection to groups (3)	Active vs. passive listening music group comparison. Receptive is better for the very ill schizophrenic or bipolar patient	A single session with experimental group

Grocke, Bloch, Castle, Thompson, Newton, Stewart, Gold (2014)	Group music therapy for severe mental illness: A randomized embedded-experimental mixed methods study.	Randomized Trial	99	Random selection to groups (3)	Examine QoL and milieu experiences and perception of milieu	13 weeks, 1 session per week for experimental groups chosen
Gold, Grocke, Mossler Et al. (2013)	Individual music therapy for mental health care clients with low therapy motivation: multicenter randomized controlled trial	Randomized Clinical Trial	141	Randomized 3 groups (3)	Individualized and focused on treatment resistant inpatients	3 months of Bi-weekly music therapy sessions with individuals
Dietrich, Kate, Prout, Boyer, Yoder (2016)	Effectiveness of group music therapy in a psychiatric hospital: A randomized pilot study of treatment outcome.	Randomized groups	32	Randomized Groups (3)	Music Therapy is therapeutically the same as group talk therapy	Weekly sessions for 4 weeks
Gavrioledidou, Odell-Miller (2016)	An Investigation of Pivotal Moments in Music Therapy in Adult Mental Health	Qualitative	11	Qualitative (5)	Examines what clients value about the music therapy in their own words	Single weekly sessions; verbal feedback about the sessions from clients

Examples of Ward Dropout Scale (WDS) and Ward Discharge Rate Scale (WDRS) Questions
and Their Related Dimensions (Moos, 1996)

Ward Dropout Scale (WDS)

1. The staff act on patients' suggestions True False
(Personal Growth Dimension)
2. Patients often gripe True False
(Personal Growth Dimension)
5. This is a very well organized program True False
(System Maintenance Dimension)
11. Staff are mainly interested in learning about patients' feelings True False
(Personal Growth Dimension)

Ward Discharge Rate Scale (WDRS)

1. New treatment approaches are often tried in this program True False
(Personal Growth Dimension)
4. Patients are proud of this program
(Relationship Dimension)
5. Patients are strongly encouraged to plan for the future True False
(Personal Growth Dimension)
14. Staff tell patients when they are getting better True False
(System Maintenance Dimension)

Appendix C.

Music Intervention Schedule as Posted on Research Unit

MUSIC MENU

18 October 2019

80's and 90's Instrumentals: To Feed Children of the 80's and 90's

21 October

Piano Pop: Because its clever

22 October

Disney and Opera: Best Combination Ever?

23 October

Classical Upbeat to up-regulate

24 October

Per your Requests: American Favorites Part I

25 October

Per your Requests: American Favorites Part II

28 October

Local Musician Originals (You will be the first to hear it!)

29 October

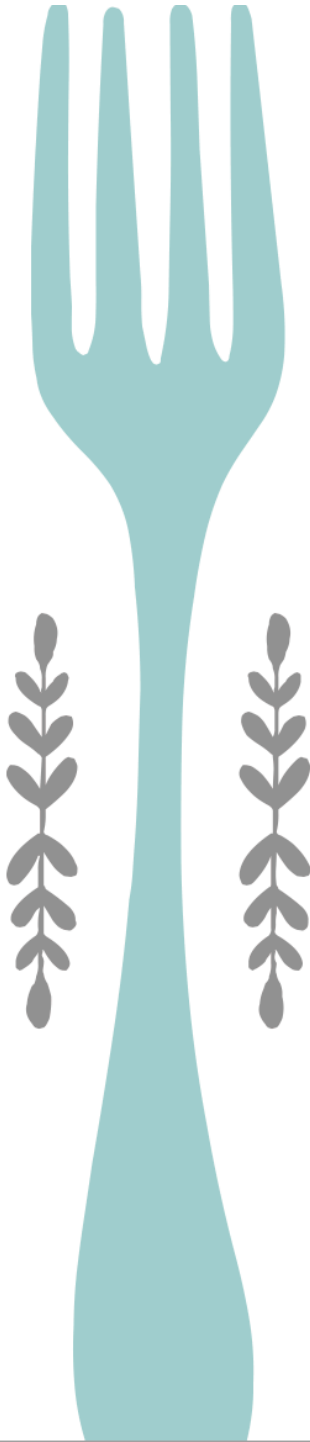
Classical and Opera

30 October

Classical and Spanish Guitar

31 October & 1 November

Per Your Requests! TBD!



Playlist Example: Piano Pop Instrumental Playlist from 21 October 2019

Firework

The Dallas String Quartet

Love Me Like You Do

Brooklyn Duo

Let Her Go

Music Lab Collective

Canon in D Major, P.37

Johann Pachelbel, Music Lab Collective

Love Yourself (Piano Arrangement)

The Theorist

Love the Way You Lie

Nazareno Aversa

Chasing Cars

Evan Camrud

Sonata No. 14 "Moonlight in C-sharp Major", Op. 27 No. 2: I Adagio sostenuto

Ludwig Van Beethove, Paul Lewis

Don't Stop Believin'

Dallas String Quartet

Wake Me Up

2CELLOS

Clocks – Coldplay

Eclipse

Roar

Frank Taylor

Safe & Sound

William Joseph

Bohemian Rhapsody

Emmanual Vass

Nothing Else Matters

William Joseph

Hotel California (Spanish Guitar)

Manuel Granada

Starving – Piano

Vanessa Stansfield

Sabrosa – Instrumental/1999

Beastie Boys

Dove

Cymande

Paint it Black

Ramin Djawadi