Nature Sounds in Music Therapy:

Applications in Adolescent Psychiatric Treatment

by

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ABSTRACT

Music is often used to induce relaxation and encourage calm surroundings, but in a group psychiatric treatment environment creating such a space can be complicated by varying and conflicting music preferences. Although best practices in music therapy encourage use of preferred music in sessions, adolescents' tastes can be so closely tied with their sense of identity that tension may arise between peers in a group setting. On an inpatient adolescent psychiatric unit this issue becomes compounded by additional factors such as inadequate communication skills and difficulties with self-regulation. Although one must be careful not to generalize or romanticize, current literature suggests specific nature sounds may have a calming effect across settings and cultural backgrounds. However, nature sound research done from the music therapy perspective is scarce, and thus evidence-based guidelines for the use of such sounds could prove useful in further exploration of their potential uses in music therapy interventions. This thesis explores the use of nature sounds as a part of music therapy treatment interventions, as well as on the behavioral health adolescent unit during daily routine where environmental sounds can be a problem. If successfully implemented in an acute psychiatric setting with adolescent patients, both during the therapy session and throughout the day, administered by the person receiving treatment and under the guidance of the music therapist, these interventions have the potential to decrease the number and severity of behavioral emergency codes, potentially leading to fewer instances of restraint, as well as more effective functioning after discharge from the inpatient setting.

Keywords: adolescents, psychiatric, nature sounds, music therapy, calm

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CHAPTER 1

INTRODUCTION

Nature sounds are unique in that they are a set of sounds that can stimulate emotional responses similarly to music. Some stereotypical descriptors for this set of sounds may include calm, serene, tranquil, and hushed. Although these adjectives are not always accurate for all natural sonic environments, the following example is an environment where these stereotypical characteristics would be applicable:

The setting is along the Mogollon Rim during one late summer's day in Arizona. There is nearly constant white noise created by the wind rustling through hundreds of pine trees. The sound waxes and wanes, and seems to swirl around in multiple levels: right to left, left to right, near, far, toward me, away from me. In the foreground the same wind whips long lake grasses, creates small waves and ripples on the lake's surface, and taps small twigs from the tops of nearby trees. The soundscape is occasionally punctuated by plops on the lake surface made by trout catching their morning meal, as well as by squirrels snapping through sticks and fallen pine needles before scratching up the rough bark of the pines.

I now want to take you into a very different sonic environment, one inside a psychiatric hospital at approximately eight o'clock at night. As I'm finishing up my documentation for my evening group, taking note of any important insights my patients had shared, I hear it over my radio first:

"Code 9, adolescent unit. Code 9, adolescent unit. Code 9, adolescent unit."

An active behavioral emergency is happening on my unit; a patient is trying to harm themselves or someone else. As I make my way from my office to respond to the code I hear it again, but through the overhead speakers, certainly louder and a little more rushed this time:

"Code 9 adolescent unit, code 9 adolescent unit, code 9 adolescent unit!"

There is a scream in the background as the page cuts off.

Swipe badge with a small, high-pitched "beep" to open a set of doors, jog down a stretch of hallway, unlock another set of doors with the first of three brassy keys. Along the way I pass several solemn-looking nurses and technicians who are also on their way to the code. Some are already donning their gray nitrile gloves and others are in the process of snapping them on. There is a seemingly endless chorus of jangling metallic keys as at least six of us quickly head down the hallway toward the unit. As I approach the locked unit, I'm hit by a rush of sounds: slamming doors, shouting staff, crying patients, screams and wails. I slip through the large, heavy entrance doors and walk onto the unit to assess the situation.

This describes the beginning of a few different experiences I have had on an adolescent psychiatric unit. The details are a little different each time: a sobbing, pleading patient is being held by two nurses and a technician in the day room; a furious patient struggles and thrashes against one nurse and three technicians in front of the nurses station; a technician sustained a head injury, a nurse hurt their leg, and so on. My duties are also a little different each time: I'm prompting a different patient to describe why it is better to walk away from a fight; I'm encouraging a patient to identify what is causing

them to feel a particular way; I'm meeting with a terrified patient, who was in no way involved in the code, as they rock and sob uncontrollably in their dark room. The outcome of these situations, however, are often the same: one or more teen-aged patients have been taken off the unit in a stretcher to be placed in four- or six-point restraints in a seclusion room, and multiple staff and patients are a little more traumatized than they were the hour before.

The two sonic examples used are admittedly polarized, but it is important to reference real situations when explaining how one's own awareness of the possible effects of acoustic environment on their behavior came to light. It was these two experiences that led to an important realization: inpatient psychiatric facilities have garnered quite an image for themselves over time – dimly lit hallways, leather-strap restraints, and distressed howls are just a few images that may come to mind. Although these seemingly horror movie-inspired environments would be difficult to find in today's psychiatric hospitals, one important take-away from this imagery remains: admission into a behavioral health facility can be a scary experience for anyone, and it can be especially difficult for children. As illustrated in the second sonic example, the environmental sounds that occur within psychiatric hospitals are part of the issue. Even when everything is observably fine on a unit, doors will still slam, people will continue to talk loudly, televisions and radios will still blare, and all of these sounds will echo and amplify off of the plexiglass windows and tiled floors. In the likely event that these sounds irritate a patient with limited self-regulation skills into acting out, there is no arguing that it is impossible to stop additional harsh sounds from happening once a behavioral emergency

occurs; staff will still have to swipe their badges, carry sets of keys, run down hallways, and shout directions; patients in distress will still cry, shout, and scream. There simply must be a better way to manage the sound environment.

In exploring possible solutions to this issue, we are led to the opposite end of the environmental acoustics spectrum to seek sounds that humans innately enjoy and find comfort in. Understandably, the common practice in music therapy is to use songs patients identify as meaningful to the individual. When working with adolescents on an inpatient psychiatric unit, however, this practice becomes difficult. The teen years mark the developmental stage of identity exploration, and the initial music therapy assessment will often indicate the value of music as an expression of the patient's forming sense of identity; sometimes their music preferences are so closely tied to their identity that they serve as an anchor to their sense of self, and any threat of judgment from others in this fragile developmental stage is emotionally hard to handle. In addition, it is common on these assessments for adolescents to name at least one musical genre they "hate" so strongly that even just talking about it changes their affect. Rap and rock are by far the most preferred musical genres in my practice, and most of the time these tastes are mutually exclusive: patients who love rap hate rock, and patients who love rock cannot stand rap. Again, while preferred music is unquestionably a wonderfully effective tool in music therapy, it is not so easy to use in group mental health treatment with adolescents.

Other popular music therapy interventions may also be problematic depending on the group dynamic. Drumming has been proven effective in the treatment of adolescent populations (McFerran, 2010), but patients may have sensory issues, such as volume or

timbre sensitivity, that make drumming more harmful than helpful. Improvisation (the spontaneous creation of sound using a variety of instruments, with or without a reference, and with varying degrees of structure provided by the music therapist) is yet another music therapy intervention that research indicates is largely effective with behavioral health populations (McFerran, 2010), but those with self-esteem deficiencies or severe anxiety could easily be triggered into a relapse if they are not comfortable with a musical exercise. Because improvisation is usually an expression of self, the issue of identity and potential judgement from others becomes a problem once again.

The next step in problem-solving is to take a more generalized approach to finding sounds that people find enjoyable. Instead of looking at the individual's response to music, we look now at human responses to sound as a whole. Are there certain sets of acoustic stimulation that we are biologically predisposed to enjoying? It stands to reason that if any auditory input would fit this function, it could be certain nature sounds, arguably the most basic and universal form of music. On the other hand, reasoning could lead one to the opposite conclusion: if certain natural sounds—such as animal calls, booms of thunder, or large boulders shifting—had an effect on human evolution and survival, we may conclude *nature sounds would not at all be relaxing.* Again, the given examples are somewhat polarized. When addressing human reactions, especially as they apply to mental health, it is best to focus on the issue using as many applicable lenses as possible in order to paint the most comprehensive, holistic understanding one can. Drawing on developmental theory, acoustic ecology research, existing literature about the use of nature sounds in health settings, and the music therapy concept of iso principle, the

clinically controlled use of nature sounds is looked at more closely to determine if they could have a calming effect on adolescent units of inpatient psychiatric hospitals as well as in home settings post-discharge, despite individual variation in cognitive and identity development.

CHAPTER 2

DEFINITIONS AND THEORIES

Within the psychiatric setting there is a lot of population-specific terminology. Likewise, music therapy as a field is still relatively young, and therefore there are some definitions and understandings of practice that may not be common knowledge.

Definitions in Psychiatry

Behavioral health, mental health, and psychiatry are often used interchangeably to describe the branch of medical treatment that addresses psychological disorders and diseases. There are two larger structures of care: outpatient treatment and inpatient treatment. Outpatient settings allow the person receiving treatment (the "client") to come and go from a facility per times they have scheduled to see a practitioner. Although they still require treatment for a psychological disorder, the client is not considered an immediate danger to themselves or others, and they are largely functional from day to day. They may have a single practitioner (usually a psychiatrist, psychologist, counselor, or social worker) or may interact with an interdisciplinary team. Intensive outpatient programs (IOPs) serve a more acute population; instead of a patient coming and going once or twice a week, they attend outpatient treatment for a few hours most days for a given number of weeks.

The inpatient setting, the one that is most directly affected by the following guidelines, involves a person receiving treatment (referred to as a "patient") to be admitted into a facility. Someone who undergoes voluntary treatment willfully enters a hospital and is recommended to complete their course of treatment until a psychiatrist (a

medical doctor specializing in behavioral health) deems them appropriate for discharge from the facility. A voluntary patient (someone who willfully entered inpatient treatment) may try to end treatment before it is complete and leave the hospital against medical advice (AMA); for adult patients, this may result in a petition from the medical team to have the patient ordered by a court to be admitted involuntarily to a hospital if there is substantial reason to believe the patient is a danger to themselves or others. Once court-ordered to a facility, the patient may not leave until discharged by their attending psychiatrist. Treatment of minors (someone under 18 years of age) is different in that admission into a behavioral health facility is almost always considered voluntary (as their guardian is ultimately the child's decision-maker), and a discharge against medical advice may result in the treatment team filing a report against the responsible guardian with their state's child protective services.

Whether the patient undergoes voluntary or court-ordered admission, they are placed onto a locked unit and may only leave this area at scheduled times and per the safety judgment of a physician, or by that of a registered nurse that the physicians has delegated this decision to. This policy is a common safety measure among behavioral health hospitals as patients may be vulnerable due to compromised decision-making abilities. Length of stay can have a wide variation from patient to patient, and is largely dependent on patient engagement in treatment as well as practitioner ability to set up necessary post-discharge services, such as outpatient treatment and housing. A typical stay may be between seven and ten days, but it is not unusual for some patients to stay

weeks or even months. In extreme cases, patients may remain in a facility for upwards of a year.

Daily treatment schedules are highly structured and usually include a variety of groups for patients to attend. On a typical adolescent unit, groups may be run by social workers or counselors, recreation or expressive arts therapists, nurses, and behavioral health technicians (BHTs). Whereas nursing groups may focus on medication compliance and BHTs may cover life skills, licensed master social workers (LMSWs), licensed clinical social workers (LCSWs), licensed professional counselors (LPCs), registered or board-certified art therapists (ATRs or ATR-BCs), board-certified music therapists (MT-BCs), and certified therapeutic recreation specialists (CTRSs) will usually encourage insight and behavioral change.

Unfortunately, behavioral emergencies are a common occurrence in inpatient mental health treatment as patients are usually very ill at the time of admission. While pacing and other signs of emotional upset are a cause for concern that warrant therapeutic intervention, active emergencies where the patient is attempting to harm themselves or others, or cause severe property damage, often require restraint. There are two types of restraint that may occur: personal or mechanical. Personal restraints involve one or more mental health workers placing the patient into a position that stops the dangerous action and holding them there until the patient can agree to cease the action. In this case, the mental health workers are the restraint mechanism; no devices are used. Mechanical restraints serve a similar purpose, but use wraps, pads, and/or straps to hold a patient in place until they can agree to cease dangerous behaviors. Mechanical restraint is often

considered a last resort, and typically are only used when lengthy holds are required, behaviors are particularly severe, or staff are at risk for significant harm if a personal hold is attempted or continued.

Psychiatric disorders. The *Diagnostic and Statistical Manual of Mental Disorders: DSM-5* lists criteria for the diagnosis of various mental health conditions. In my practice, depressive disorders are some of the most common diagnoses encountered on the adolescent unit. According to the *DSM-5* (2013), depressive disorders may stand alone or occur secondary to another medical condition, and they may be chronic or singularly episodic, but in all instances these disorders present with sad, flat, or irritable mood which has a notable negative impact on one's ability to physically and cognitively function from day to day. Anxiety disorders are also quite common; these diagnoses are characterized by persistent feelings of stress and anticipation that are severe enough to impact daily function (American Psychiatric Association, 2013). The *DSM-5* differentiates anxiety disorders from trauma- and stressor-related disorders, which involve disruptive anxiety as a result of a psychologically traumatic event (2013). Other common diagnoses that may be seen on an adolescent unit may include bipolar disorder, which involves fluctuation between manic and depressive states, and schizophrenia spectrum disorders which typically present with delusions (rigid beliefs not based in reality), hallucinations (perception of auditory, visual, and/or kinesthetic stimulation without an external source), disorganized thinking (as demonstrated by incoherent or tangential speech or writing), and in some cases catatonic (minimally reactive to environment) behavior (American Psychiatric Association, 2013).

This overview is greatly simplified, but it provides a basic understanding of the challenges and situations an adolescent may experience while hospitalized in a behavioral health facility. It should be noted that patient experiences will differ based on the individual, their diagnosis, and their location, among a variety of other factors.

Definitions in Music Therapy

In order to understand how music therapy can help create a more comfortable hospitalization for adolescent patients, we must first understand what music therapy is. The American Music Therapy Association (AMTA) provides the following definition of the profession:

> Music Therapy is 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. Music Therapy is an established health profession in which music is used within a therapeutic relationship to address physical, emotional, cognitive, and social needs of individuals … Through musical involvement in the therapeutic context, clients' abilities are strengthened and transferred to other areas of their lives (2018).

The Certification Board for Music Therapists (CBMT) provides yet another definition of music therapy:

> Music therapy is the specialized use of music by a credentialed professional who develops individualized treatment and supportive interventions for people of all ages and ability levels to address their social, communication, emotional,

physical, cognitive, sensory and spiritual needs (2011).

From these two perspectives we can definitively say that music therapy can only be facilitated by a board-certified professional that holds a music therapy degree from an approved program. It is also clear that music therapists can address a variety of needs in a multitude of settings. These definitions do not, however, declare whether music is simply a tool or whether it is the therapy itself – for clarity, in these proposed guidelines musical elements will be approached as the catalyst for the actual therapy, which involves verbal recognition and exploration of the emotional and cognitive impacts created from the introduction of said musical elements. In other words, the music is the tool, and the therapy is the process of enacting a recognizable change within the context of a therapeutic relationship, which is observable outside of the therapeutic setting.

In psychiatric music therapy, music is a stimulus often used to create structure and familiarity in an otherwise uncomfortable environment. This medium, when applied by an appropriately trained and credentialed music therapist, can be an especially appealing and accessible way for adolescents to explore self-expression and emotional self-regulation. However, music preferences often vary greatly, so it can be difficult to devise effective music therapy interventions for a group that will be equally therapeutic for all participants. Herein lies a specific challenge with the adolescent psychiatric population; teen-aged patients will likely be in varying stages of cognitive development and identity exploration. Some teens will think more concretely while others may be highly abstract, and certain patients will have a very solid, inflexible sense of self while others may be

fluidly exploring various facets of their identity. In order to best understand these issues, one must be familiar with a few different theoretical frameworks.

Theoretical Frameworks

The proposed music therapy guidelines for the incorporation of nature sounds in adolescent psychiatric treatment are based in developmental theory, psychoacoustics, and the known physiological impacts of music.

Developmental theory. Looking at Erik Erikson's stages of development model, a typically developing adolescent will be working through the identity versus role confusion stage; developmentally younger teens, however, may still be in the industry versus inferiority stage, and thus struggling to navigate social expectations while also grappling with a forming sense of self (1963). In other words, even the average teenager will likely have some difficulty grounding themselves in an identity, and this is perfectly normal. The teenager with points of trauma, intellectual disability, or mental illness, however, may have this issue compounded with an unclear sense of place in their larger social environment. Unless these stages are satisfactorily resolved, the child's developmental hurdles will continue to be an issue as they age (Erikson, 1963).

Jean Piaget's famous theory of cognitive development indicates a typically developing teenager should be in the formal operational stage and therefore able to think abstractly (such would be the case with ideas and concepts, things that cannot necessarily be seen or touched), but any cognitive delays may result in an adolescent functioning within the concrete operational stage, and intellectual disability may place a teenager's cognitive functioning within the egocentric preoperational stage (1953). The average

teenager should be able to talk through intangible ideas such as emotions, thoughts, and motivations, which is especially important in a psychiatric treatment setting where lasting success is largely dependent on insight into one's behavior patterns. If a teenager can only understand what can be touched and visualized in a linear way, however, a different mental health treatment paradigm is necessary.

According to approaches in developmental music therapy, a music therapist should always consider a patient's current developmental level of functioning when planning treatment (Briggs, 2015). Even an adolescent with typical development patterns can experience uneven spurts of cognitive, emotional, and personality growth, but development can be complicated by trauma and psychological disorders. It goes without saying that musical skills and abilities change across a lifetime, but as Briggs (2015) points out, children of various ages will respond differently to particular musical elements, perhaps depending on their developmental stage. This point highlights a very important consideration: if someone is delayed in any facet of their development as a result of psychological or emotional trauma, they may become psychologically stuck (Taylor, 2002), and respond differently to music than normally developing peers of the same chronological age.

Montello (1999) suggests such behavioral delays may be the result of emotional dysregulation, a maladaptive sense of order, and even personality fragmentation. Taylor adds that consistent stress over time can lead to "diminished cognitive performance with impaired coping capacity" (2010, p.121). These assertions make sense in the context of motivational psychological theory; if basic needs such as physiological well-being and

safety are consistently not being met, the person does not have a chance to meet higher needs such as belonging and esteem, let alone self-actualization (Maslow, 1954). In other words, development cannot occur (or maladaptation will occur) if a child does not have the accommodations to do so, and thus they become developmentally "stuck." What this translates to in a group treatment setting is that the music therapist will either have to travel back (process backward in time, musically or verbally, to the point of trauma) with individual patients to address these trauma points, or operate within interventions that appeal to multiple levels of developmental function. Although the former option is more idealistic, the latter is certainly more realistic.

Psychoacoustics. When listening back on a recording one took on their smart phone during a rock concert, the person may be disappointed to find that their listening experience is not the same. In the recording there may be more echo, a nearby person speaking quite loudly, and more prominent sounds of shuffling bodies, among other things. While some of these sonic variations can be attributed to the quality of the recording device, there can be a difference between a sound's objective, measurable qualities and the perceptual experience created when it is processed through an individual's brain; the study of psychoacoustics explores the relationships between these two sound experiences (Moore, 2007).

The human auditory system is able to filter out some unwanted aspects of complex sounds, as well as to prioritize some sounds while masking others (Moore, 2007). To continue with the rock concert example: while attending a performance, a person's attention is likely on the band and the live music produced. Sounds that fall too

far outside of the music's filter (such as feet shuffling, talking, or clothes rustling) are likely to be minimized or excluded in a person's perception of the overall sonic experience. As Fiebig (2015) notes, context plays a significant role in the human perception and resulting sensations of auditory stimuli. Recording devices have no such filter, preference, or sense of prioritization.

Because developmental theory is considered in the music therapy guidelines to come, it is worth looking at psychoacoustics from a developmental standpoint. Because most children reach adult-like hearing at about 10 years of age (Werner & Vandenbos, 1993), a developmentally normal teenager should have hearing thresholds and filters similar to those of the music therapist. However, children who have experienced abuse or neglect at a young age may have difficulties with hearing and speech perception. According to Werner and Vandenbos, "experience with sound is necessary for normal development of speech perception in humans," and "Auditory deprivation, caused by various types of hearing loss, appears to affect auditory processing" (1993, p.624); it stands to reason, then, that children with a history of neglect or abuse where auditory stimulation was withheld or not present may perceive sonic environments differently than their developmentally typical peers.

Neurologic music therapy. Established by music therapist Michael Thaut, neurologic music therapy (NMT) practice is rooted in the known physiological and neurological effects of music; in his research Thaut has advocated for "a neuroscience-guided model based on brain function and music perception" in music therapy practice (2005, p.303). The NMT approach appears to meet this description. Among Thaut's

findings (2010) is that people with brain structure abnormalities show improved psychosocial function (including decreases in emotions such as anxiety and depression) when targeted music interventions are applied.

First acknowledged by psychiatrist and music therapy advocate Ira Maximilian Altshuler (Davis, 2003), the concept of iso principle is of particular importance, and in music therapy is understood to mean musically matching the patient's mood with appropriate instrumentation, tempo, and dynamics before progressively transitioning them to a desired mood state using various musical elements (Davis, Gfeller, & Thaut, 2008). In layman's terms, iso principle means meeting a patient where they are at in order to help them move to where they want to be. In part, this works because music can be an acoustic representation of an emotion, as certain arrangements of tones, different tempos, and playing styles, among other musical elements, can suggest a recognizable emotion (Crowe, 2004). It can be argued, then, that music is a unique tool in that it may not only accurately represent a specific emotion to an individual, but it can be changed to guide and influence mood.

However, "meeting a patient where they are at" is not always easy or comfortable from the music therapist's perspective – if the patient is feeling difficult emotions such as anxiety or anger, or if the patient is demonstrating high energy and impulsiveness, the music therapist may be concerned with 'feeding into' these mood states in addition to matching them. Difficult or high-energy mood states may require the use of timbres, dynamics, and tempos that are uncomfortable for the therapist, or that the patients themselves have identified as unpleasant or disquieting *while in a different mood state*.

The therapist should remember that, if they are making an effort to use iso principle with a patient, uncomfortable emotions may need to match with uncomfortable sounds until the patient is ready to make the transition to another mood state.

CHAPTER 3

LITERATURE REVIEW

It is important to look at environmental sounds for what they are, and to avoid biases and romantic approaches that tote nature sounds as a magical cure that all people will enjoy. Much like other auditory stimuli, likeability of a sound is impacted by previous exposure, emotional connections, and a myriad of other factors. In other words, someone may find rain and thunder comforting while another person finds the same sounds noisy and unpleasant. Also, we must clearly define "nature sounds;" although grizzly bear roars, rockslides, hurricane winds, and agitated moose grunts are natural sounds, it is understandable that many people would not find these relaxing or pleasing. For the purposes of reviewing existing literature, "nature sounds" are understood to be low-intensity water sounds (e.g. rain, ocean waves, creeks), foliage sounds (e.g. breeze through tree leaves or grasses, twigs snapping), calls from small animals, or birdsong, unless otherwise specified.

Nature Sounds in Health Settings

Nature sounds appear to be uniquely pleasant-sounding to many people; even when compared to a mixture of natural and man-made sounds at the same or a decreased decibel level, nature sounds are preferred (Alvarsson, Wiens, & Nilsson, 2010). Furthermore, bird song, moving water, and wind through various plants are sounds often associated with calmness and even silence (Cerwén, Pedersen, Pálsdóttir, Sullivan, & Chang, 2016). Not only are natural sounds perceived as being quieter than man-made sounds, then, but this perception can be so profound that listeners believe these sounds

are actually softer than objectively quieter human sounds. The distinct effects of nature sound on mood and state are supported by functional near-infrared spectroscopy readings, which indicate stronger signals than sounds classified as 'annoying,' such as man-made sounds (Hong & Santosa, 2016). Although environmental sounds appear to be subject to personal preference, research shows many urban sound environments can have negative impacts on health; nearby highway and airport sounds, for example, may lead to elevated blood pressure and stress hormones, as well as increased muscle tension and risk for sleep deprivation (Epstein, 2016).

Whether applied before, during, or after an event, natural sounds have a notable effect on anxiety, to the point of being able to induce a relaxed state. Nature sound interventions may decrease anxiety immediately preceding a specific stressful event (Ertuğ, Ulusoylu, Bal, & Özgür, 2017), and after a physically and mentally trying event, nature sounds may improve anxiety and relaxation (Cutshall, Anderson, Prinsen, Wentworth, Olney, Messner, . . . & Bauer, 2011). Nature sounds seem to have a calming effect during such events as well (Saadatmand, Rejeh, Heravi-Karimooi, Tadrisi, Zayeri, Vaismoradi, & Jasper, 2013). It goes without saying that nature sounds cannot negate all pain or negative effects of physically and psychologically trying procedures. However, people who are exposed to nature sounds often report noticeable decreases in such negative effects than people who are not exposed to the sounds at all (Lechtzin, Busse, Smith, Grossman, Nesbit, & Diette, 2010). Even a brief intervention can have an observable impact; nature-based interventions, such as listening to nature environments,

can be as short as seven minutes and still produce notable improvements in anxiety levels (Largo-Wight, O'Hara, & Chen, 2016).

Acoustic Ecology

It is difficult to explore nature sounds and their impact on people without first talking about acoustic ecology. According to Wrightson, acoustic ecology is "Your awareness of sound – specifically your *level* of awareness of the acoustic environment at any given time," and goes on to describe the field's focus on the emotional and cognitive impacts environmental sounds can have (2000, p.10). In other words, acoustic ecology explores how living creatures are impacted by their sound environment, and in turn how organisms interact with their sonic surroundings; it encourages acoustic ecosystems that are beneficial to all who take part in the sound environment. Another important part of acoustic ecology is the analysis of sonic environments using high-quality field recording and spectrograms to study the human impact on non-human environments (Paine, 2017). Listening is perhaps one of the most important tools used in acoustic ecology, and it may creatively manifest through a variety of listening exercises and practices such as soundwalking, sonic meditation, and performance of deep listening pieces. These practices require from the participant an open mind, attention, and tools such as blindfolds, hiking equipment, and recording devices.

R. Murray Schafer, who is commonly known in the field as the father of acoustic ecology, has referred to "the outdoor environment" as the original and one of the greatest contexts for music (2001, p.60). Whether intentional or not, different kinds of music from

all over the world is created in open spaces and thus is influenced by the sonic environment. Schafer goes on to explain in more detail:

> The world is full of sounds. They come from far and near, high and low; they are discrete and continuous, loud and soft, natural, human and technological. They enter and depart in processions as events pass us or we pass by them … Something is already in progress before our arrival and it succeeds our departure (2001, p.61).

Bernie Krause, another prominent figure in acoustic ecology, discusses the role of natural environments in human music traditions:

> Long ago, we acquired our musical heritage largely from the animal world, of which we were once a collective and integral part. We now earn our musical certification by degree at institutions … To me, it is the sound from the unaltered natural world that is the real music I love most (2001, pp. 216-217).

There are two larger ideas that can be pulled from the words of these acoustic ecologists. The first is that, although sound moves and changes, it is a phenomenon that has existed at least as long as humans have, and it is likely that it will continue to exist after our species is gone. The second idea is that the earliest humans had to listen to the sounds around them before they could create music. It is understandable, then, why listening is so central to humans. The field of acoustic ecology brings attention to this idea.

Approaches to listening. Michel Chion (1990) talks about three different types of listening modes: causal listening, reduced listening, and semantic listening. Whereas

causal listening involves listening for the source of a sound, and is thus both common and easy to manipulate, reduced listening and semantic listening are progressively more complex; reduced listening focuses more on the acoustic traits of a sound (frequency, timbre, loudness, duration, location, etc.) without much thought given to its source, and semantic listening involves understanding the intricacies and interconnectedness of sounds in a sonic ecosystem, such is the case with a language or code.

Hildegard Westerkamp is a sound ecologist best known for her development of 'soundwalking,' or taking walks through an acoustic environment with the purpose of practicing various levels of listening. According to Feisst (2018), Westerkamp would only minimally process her recorded soundwalks, and when she did incorporate considerable sound editing, it was with the purpose of reflecting on the outcomes of dissecting an acoustic environment. In addition to challenging what can be thought of as a musical instrument, Westerkamp effectively highlighted the different ways we can interact with our sound environments, including those created within ourselves, as is the case with dreams (Feisst, 2018).

We can observe how different modes of listening are used in Westerkamp's *Kits Beach Soundwalk* (1989). In this soundwalk composition, Westerkamp identifies the source of a particular sound as coming from barnacles at Vancouver's Kitsilano Beach, and goes on to use onomatopoeia to simultaneously describe and re-create the sounds she hears; for example, when describing cracking, popping, and sucking sounds, her own inflection and articulation of these words seems to mimic the very sounds she describes. She then turns her attention to the larger sound ecosystem, describing the sound of the

barnacles interacting with the sounds of a nearby city. She then reflects upon how sound editing techniques can be used to filter out unwanted noises present in the acoustic space to create a more aesthetic, though unreal and incomplete, sound experience.

Deep listening is yet another approach pioneered by composer Pauline Oliveros. Oliveros (2005) describes deep listening as an acute attentiveness to a performer's conscious contributions to an auditory environment, and the performer's physical, cognitive, and emotional presence within a piece of music. In other words, deep listening involves not only awareness of external sounds and their interconnectedness with each other, but the participant's physical and emotional experiences as well. Oliveros concerned her work with human experience and contribution to sound environments; many of her pieces are very accessible to musicians and non-musicians alike, and they change depending on the unique individuals who take part in the performance (Oliveros, 2005). To provide an example, Oliveros's *Energy Changes* (1974), a sonic meditation, is highly reliant on the more active modes of listening. Awareness of the surrounding acoustic environment and the occurring auditory interactions is encouraged, but attention is also focused on the participant's body and how their own voluntary and involuntary sounds fit within the overall sound experience. The act of interacting with the sound environment – the deep listening and thoughtful acoustic contribution – is the meditation.

Environmental Music Therapy

The difference between music (stereotypically a pleasing set of sounds) and noise (stereotypically disruptive or unpleasant sounds) can be a gray area; like in the case of music, a listener's positive or negative reaction to sounds is based on his or her

environmental experiences and this may determine the personal preference or sounds connected to emotional memories (Paine, 2017). Familiarity can also play a significant role; frequency of exposure and level of sensitization can impact the distinction between a pleasant or unpleasant sonic experience. Regarding medical settings, Mazer (2010) points out that patients are often unfamiliar with the sounds found in a hospital environment, and their inability to control these sounds can present an extra challenge in a setting where the patient most likely already feels powerless. Contrary to what the term would suggest, so-called 'background noise' can have a strong, noticeable impact on a patient's perception of safety and well-being in a medical setting because auditory stimuli, although not as dominant or prioritized as visual stimuli, arguably provides an individual with more detailed information than any other single sense (Mazer, 2010).

Subjective feelings of powerlessness, frustration, and irritation are not the only consequences of perceived noise in medical environments. Unwanted sound is often the cause of sleep deprivation for patients (Baker, 1993), and some sounds are so disruptive that they lead to medical, nursing, and medication errors (Tijunelis, Fitzsullivan, & Henderson, 2005). Although seemingly harmless, high-frequency sounds (such as beeping monitors) and low-frequency sounds (from air conditioning units or movement of large medical equipment) can lead to a 'fight or flight' stress response which, immediately and over time, can lead to elevated blood pressure, pulse, and respirations (Chang-Lit, Loewy, Fox, Grabscheid, & Fogel, 2018). These are very serious consequences of an uncontrolled sonic environment, and it becomes clear why music

therapists have concerned themselves with trying to incorporate such sounds into, or replace them with, music.

Canga, Hohm, Lucido, Grossbard, and Loewy define environmental music therapy (EMT), a term first used by music therapist Steve Schneider, as "a noninvasive mind–body intervention that considers the physical, psychological, and cultural needs of patients, caregivers, and staff" in a medical setting (2012, p.221). The aim of EMT interventions is to decrease stress in fragile environments with the introduction of live or recorded music in an attempt to create better health outcomes for staff and patients alike (Canga et al., 2012).

Virtually all existing literature on the use of nature sounds to reduce anxiety and induce relaxed states points to this category of sounds being uniquely effective. Furthermore, nature sounds create a common, more neutral ground for people with differing (or even conflicting) music preferences to meet. So why are they not used more often in music therapy interventions during sessions? It is possible that there is a perception that nature sounds are not "music," and thus music therapists do not think to use them, or are resistant to incorporating them into interventions. For some music therapists, nature sounds may not be accessible due to lack of natural spaces or technology to play recordings with. In the guidelines I propose, I hope to change these perceptions and illustrate how nature sounds can be used as musical elements within music therapy practice, including both in the music interventions used within the treatment session, and the acoustic considerations within the environment outside of the music therapy session, but within the inpatient milieu.

CHAPTER 4

MUSIC THERAPY IN ADOLESCENT PSYCHIATRY

As stated previously, music therapy in adolescent psychiatric treatment has nuances and special considerations. Much like any other specialty, there are common approaches, techniques, and interventions that are used within this setting. As Crowe and Colwell (2007) point out, music therapy intervention begins with assessment, where the music therapist may take into consideration medication regimens, musical skills and preferences, and cognitive, psychosocial, and physical function. In my experience, interviews with few open-ended questions that are structured like a conversation tend to yield the most honest, telling responses. My assessment uses some combination of the following questions:

What do you like to do in your free time?

When you need to relax, what do you do?

Outside the hospital, when you have a problem, who do you talk to?

Do you have any physical things going on, like asthma or heart problems?

What are some of your strengths, or something you like about yourself?

Of course, there is so much more the music therapist can learn from the assessment from observing the patient as they answer. The patient's eye contact, posture, facial expressions, vocal tones and inflections, volume, and movements, among many other things, can be indicators of their overall well-being. If the music therapist becomes too caught up in asking many specific questions, it is easy to miss the other ways adolescents communicate. A medical chart review can answer many questions (Why are

they there? What is their diagnosis? What medications are they taking? Do they have a history of substance use?), but it cannot provide an observation of the individual and their mannerisms.

Assessment is also an opportunity for the music therapist to bond and build rapport, especially if an adolescent is encouraged to share their music in a safe, judgement-free space (Crowe & Colwell, 2007). Even just taking an interest in an adolescent's music preferences can begin the rapport-building process; asking "What kind of music do you like to listen to?" can go a long way in accomplishing this. The music therapist's ability to recognize artists and bands can provide a sense of validation, especially if the patient uses their music preferences as a tether to their sense of identity.

Goals and objectives are then created based on the assessment's indications. Some goals in psychiatric adolescent treatment may include improving reality orientation, impulse control, communication skills, or distress tolerance; learning new self-regulation strategies, relaxation techniques, or leisure habits; and demonstrating healthy boundaries, exploring healthy feelings of self-esteem, or verbalizing emotions in an appropriate way (Crowe & Colwell, 2007). In any case, goals should aim to improve skills needed for daily function. Since the average length of stay for an adolescent in an inpatient psychiatric hospital is usually around a week, it is especially important to keep goals specific, achievable, measurable, and few (no more than two or three).

Relatively short hospitalization is also why each music therapy session should be treated as an opportunity for adolescents to learn and demonstrate learned skills based on the goals set by the music therapist. There are a number of interventions that are typically

used in this setting with this population to accomplish this task, as shown in Table 1. Bitcon (2000) discusses the use of rhythm activities, such as group drumming, Orff chants, and percussion band activities. Schmidt (1998) encourages use of drumming activities and drum ensemble playing, and Rio and Tenney (2002) bring attention to the use of group handbell, tone chime, and large drum playing for power expression. Rock band set-ups that include electric guitars, electric bass, keyboard, and a drum set can also be appealing to adolescents (McFerran, 2010). Singing, songwriting, movement to music, art to music, and lyric analysis can be used for identity promotion and emotional expression while interventions such as auditory discrimination exercises can be helpful in reality orientation (Crowe & Colwell, 2007).

Table 1

Music Therapy Interventions for Adolescents with Mental Illnesses

INTERVENTION	GOAL AREAS ADDRESSED
GROUP DRUMMING	Expression, communication, socialization, impulse control, reality orientation
GROUP SINGING	Expression, emotional awareness, socialization
SONGWRITING	Expression, emotional awareness, communication
MOVEMENT TO MUSIC	Expression, emotional awareness, impulse control, mindfulness
ART TO MUSIC	Expression, emotional awareness, mindfulness
LYRIC ANALYSIS	Expression, emotional awareness, communication
IMPROVISATION	Expression, mindfulness, communication, socialization, impulse control
AUDITORY DISCRIMINATION	Reality orientation, mindfulness

There is a reason why these interventions are typically used with adolescents in inpatient psychiatric settings: research and practical application show they are largely effective in helping patients meet therapeutic goals (Crowe & Colwell, 2007). However, there are times when the group dynamic on an adolescent unit require more neutral sounds that may be guided by preference, but have fewer ties to identity. Also, increasing the number of possible interventions that can be practiced to help the adolescents understand, cope with, and change behaviors related to acting out in ways that cause harm to themselves and others is of primary importance. Developing insight on the impact of their acoustic environment, and how to control some of the sounds they are hearing could be the answer to reducing the stress the adolescent faces. That is where the proposed guidelines for the use of nature sounds in music therapy interventions may be useful.

CHAPTER 5

NATURE SOUND APPLICATION IN MUSIC THERAPY

Rationale

The use of specific nature sounds in music therapy interventions, especially in mental health settings, seems to be underutilized and underrepresented in existing literature. Therefore, it is important to outline an evidence-based way to approach the use of nature sounds as music therapy to establish future research opportunities, as well as to interpret success and best practices through the music therapy lens. Adolescents in an inpatient behavioral health setting may especially benefit from such guidelines as initial assessments often indicate deficiencies in relaxation skills, distress tolerance, and self-regulation strategies. These functional deficiencies could be exacerbated with the inability to manage the impact of the unpleasant sound environment and may lead to instances of seclusion, personal restraint, or even mechanical restraint, which can be needlessly stressful for patients and staff alike. Nature sounds in music therapy interventions may be useful in creating a better controlled, more pleasant sonic environment while providing important relaxation tools for adolescent patients. In both of these applications, instances of behavioral emergencies and restraint (personal or mechanical) have the potential to be reduced.

The larger overall goal of the following music therapy interventions is to reduce the number or behavioral emergencies and instances of restraint that occur on inpatient psychiatric adolescent units. In order to accomplish this goal, the music therapist must guide the patients to an improved understanding of the effects certain sounds have on

individuals (positive, negative, or neutral), as well as recognition of resources for controlling one's immediate acoustic environment. These interventions were designed to provide the music therapist with ways to help manage a unit's sound environment and to help teach patients how to manage their sonic environments, inside or outside the hospital.

Preliminary Data

To better understand the impact of sound and volume of sound at different times of day, the sound levels on an adolescent unit in an inpatient psychiatric hospital in the southwestern United States were measured four times a day, Tuesday through Saturday, over three weeks. Loudness was looked at more closely in this case because volume is a common complaint from patients and staff alike on this particular unit. However, it could be that staff and patients simply do not have the vocabulary or acoustic knowledge to describe in more specific detail the sonic traits that make certain sounds unpleasant. Because this is a very likely possibility, future research should take into consideration other sound factors such as frequency, duration, and timbre.

Figure 1 provides a diagram of this adolescent psychiatric unit (not to scale). Measurements were taken at the unit's entrance door, in front of the nursing station, and in front of the multipurpose area each time. In all three areas, it is quite common to hear heavy wooden doors slamming, people talking, footsteps, staff radios, and the overhead radio. Depending on how the other units are doing, the sonic environment is sometimes punctuated by codes being called over the intercom system (similarly to the code

described earlier in the introduction). The floor is tile, and some parts of walls have been replaced by plexiglass; needless to say, these sounds echo and amplify.

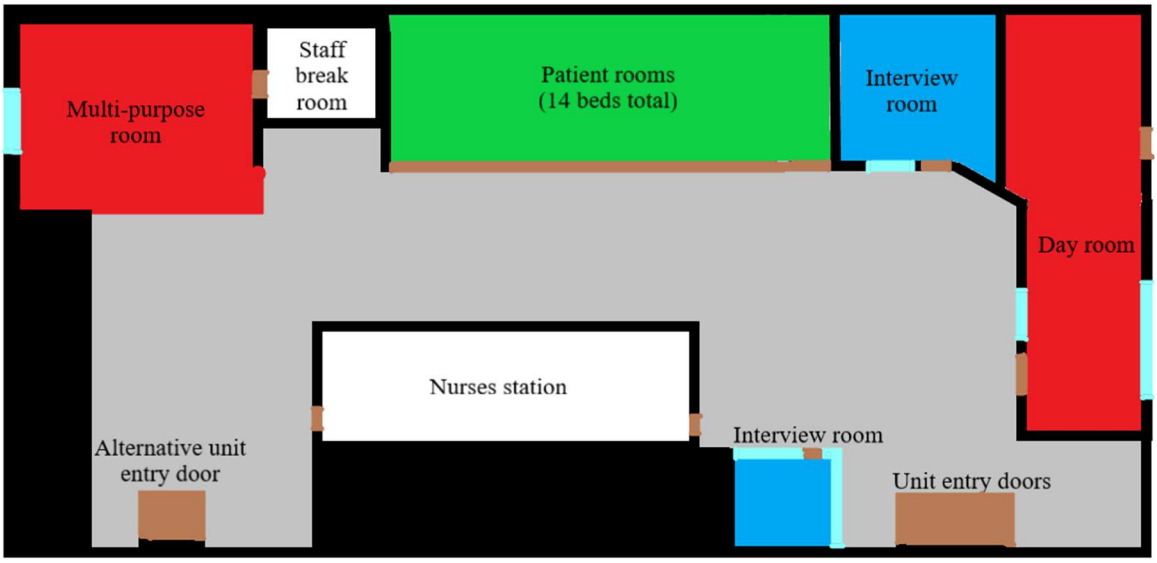

Figure 1. Adolescent Psychiatric Unit Diagram. Black lines indicate walls, brown areas are doors, and cyan lines indicate plexiglass.

As shown in Table 2, decibel levels for all three areas tend to increase as the afternoon progresses into the evening. Table 3, however, suggests that the average "loudness" throughout the week differs for each area; whereas the unit entrance remains consistent throughout the week, small increases in decibel level occur around the nurses station and multi-purpose area as the week progresses. Table 4, adapted from Hodges and Sebald (2011, p.83), provides some decibel levels of common sounds for comparison.

Table 2

Decibel Levels on an Adolescent Psychiatric Unit

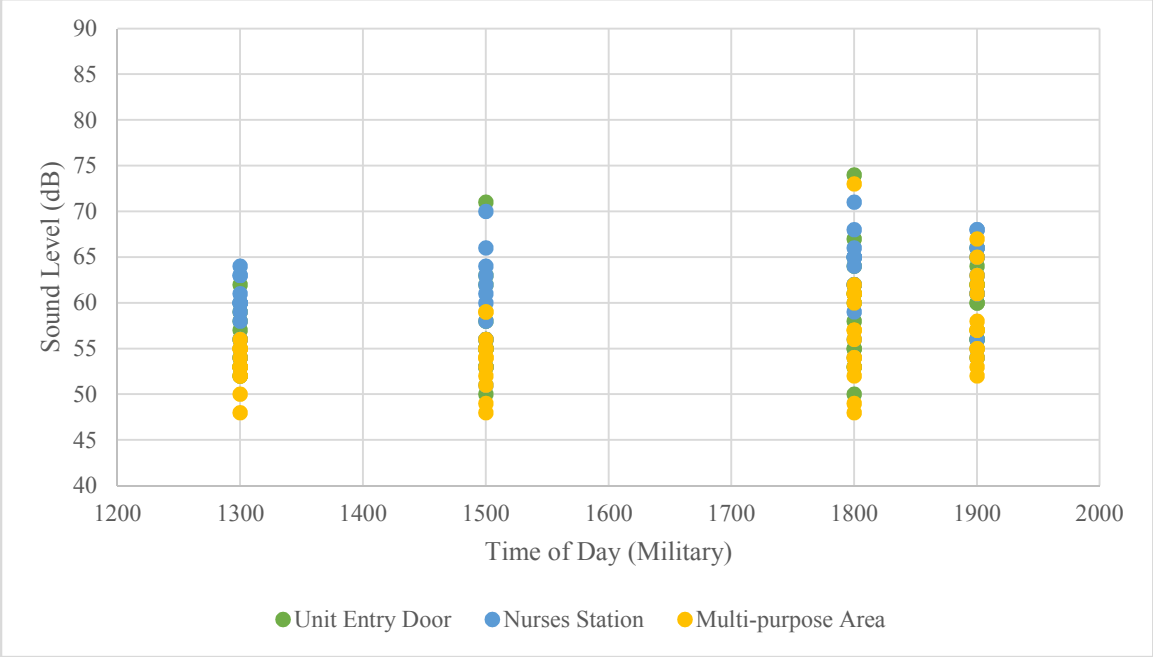

Table 3

Average Daily Decibel Levels on an Adolescent Psychiatric Unit

	UNIT ENTRANCE	NURSES STATION	MULTI-PURPOSE
TUESDAY	58	54	54
WEDNESDAY	58	60	53
THURSDAY	58	62	57
FRIDAY	58	63	56
SATURDAY	58	62	57

Table 4

Decibel Levels of Common Sounds

Sound Name	Decibel Level
Threshold of hearing	0 dB
Classroom during a test	50 dB
Conversation at 3 feet	60 dB
Most wind instruments	90 dB
Threshold of pain	120 dB

These increases in decibel level are consistent with staff reports that the chance for behavioral codes on the adolescent unit tend to increase around the evening shift change, and even more so heading into the weekend days.

Interventions

Music therapy interventions may have two levels of participation: receptive (based in listening) and active (participants are creating something or engaging in a task). Some interventions may be clearly one participation type or the other, whereas other interventions will rely on some combination of the two kinds. In either type, interventions should consider iso principle, and therefore be chosen based off of the beginning overall energy and sound levels with the idea of vectoring to a quieter, softer set of sounds.

Receptive. Interventions of this type should be listening-based, and will likely utilize live sounds or nature sound recordings. If patients do not want to participate in this experience, they should always have the option of entering a room where the sounds

cannot be heard. A few receptive nature sound-based music therapy interventions as well as needed materials, a short description, and special considerations a music therapist may want to take before, during, and after intervention implementation are described below.

Because these interventions may induce a relaxed state, the music therapist should be mindful of patients who have a history of trauma and are susceptible to flashbacks, as well as patients who are actively experiencing paranoid delusions. In both cases a relaxed state may lead to distress. In my experience patients with psychosis who are experiencing auditory, visual, and/or kinesthetic hallucinations have done well with these interventions, but the music therapist should be knowledgeable about an individual's unique experience with their diagnosis, and thus their needs and appropriateness for an intervention.

Environmental reflection. The goal of this intervention is to improve awareness of one's sonic environment. This intervention can take place inside then outside, or just outside. If possible, have the patients sit in a circle on the ground. Instruct them to remain quiet for 30 seconds (or 60 seconds when reasonable), listening closely to any sounds they hear. Have patients take turns identifying and describing the different sounds in their immediate environment, and encourage them to use onomatopoeia or sound re-creation if they have trouble describing what they hear. For example:

1. Airplane; low, booming, moving toward and then away from me.
2. Wind through the trees; soft, rustling, on-and-off

Especially if the exercise is done inside before repeating it outside, this experience creates a foundation for discussions about environmental sounds and

mindfulness about how they impact a person. In addition to the prompts about what sounds can be heard, some facilitator questions may include:

1. What kinds of sounds might you hear at your home?
2. What kinds of sounds make you feel a strong emotion? Why?
3. What can you do to manage your sound environment?
4. Why is it important to be mindful of your sound environment?

For patients who are prone to feelings of distress resulting from a relaxed state, the music therapist should allow individuals to keep their eyes open. The therapist may also want to incorporate tactile stimulation, such as running one's hands through grass or focusing on the feeling of the sunlight or wind on one's skin, for further grounding.

Scene listening. The goal of this intervention is to improve patients' repertoire of environments and the unique sounds that occur within them. This intervention requires a device to access a variety of nature sound recordings, such as a computer with internet access, a smart phone, tablet or a CD and CD player. The music therapist should provide a few different "scenes," for example: a beach, a windy forest, desert thunderstorm, and birdsong. Depending on the patients, they may or may not be able to sit back and listen; it may be useful to provide coloring sheets or drawing materials to keep patients focused. The music therapist may facilitate a listening experience similar to the one described in the environmental reflection intervention; alternatively, patients may be instructed to structure their time independently and reflect on the role and effect of the recordings afterward.

Active. Active interventions may involve guided instrument play, breathing, vocalizations, body percussion, and/or movement along with a recording's "scene." Some possible exercises, as well as materials and considerations, are described below.

Recreating environmental sounds. This intervention aims to improve sound environment awareness. Begin with a listening experience similar to the one described in the environmental reflection intervention. However, instead of moving on to a discussion right away, first have participants take turns recreating the sounds they heard using instruments, body percussion, voice, or anything they can find in their immediate surroundings. Some instruments may include different sized hand drums, a buffalo drum, an ocean drum, rain sticks of varying sizes, chimes, or shakers; body percussion could manifest as clapping, rubbing hands together, snapping, or clicking one's tongue; improvised instruments from the immediate surroundings may include hard floors, sticks, leaves, or small stones. Complete the intervention with the same or similar facilitation prompts as those listed in the environmental reflection intervention.

Nature-based improvisation. Patients should take away from this intervention a better understanding of how sounds in an environment are produced. This intervention is a good follow up to one of the exercises that encourages sound environment awareness. The music therapist may want to introduce instruments, give and overview of body percussion sounds, or even point out different ways to make sounds using resources in the immediate environment (see the recreating environmental sounds intervention for some examples). Instruments should be presented in an accessible way so patients may choose different sounds depending on what they are attempting to represent. In addition,

the therapist should bring a container filled with a variety of sound environments written on folded pieces of paper. Example environments may include a rush hour freeway, a waterfall in a mountain forest, Times Square in New York City, and a monsoon storm in the desert. Depending on the group and how many participants there are, there are a few different ways to go about this intervention:

a. Participants pull a "scene" card and improvise the soundscape using available materials. Patients should focus on being as detailed as possible, and exploring as many scenes as they can in the allotted time.

b. Participants will pull a "scene" card, and without showing the therapist what the card says, try to recreate the given soundscape with the available instruments. If the therapist can correctly guess the scene, the participants receive a point.

The therapist may want to have a discussion after each scene, or wait until the end of the entire experience to talk about how patients represented specific sounds as well as techniques patients used to make a sound 'fit.' Speed when manipulating an instrument, force used, instrument choice, and mechanism for sound production (use of fingertips over a beater, for example) are some topics the music therapist may want to explore with patients.

Nature scene composition. The goal of this intervention is to improve understanding of nature sound effects on mood. This intervention stems out of the nature improvisation exercise, and thus will use the same materials. After some sound and instrumental exploration, task patients with coordinating a nature scene 'piece' using various re-creations of sound as well as movements to simulate the direction and layering

of an acoustic environment. Much like a typical musical piece, the patients should play with layering, instrumentation, dynamics, and tempos. After the patients perform their work, prompt them for their feelings during the experience. For example:

1. What about this exercise felt comfortable or easy?
2. What about this exercise felt uncomfortable or difficult?
3. Did any other feelings arise during the exercise? Why do you think this is?

Ask if there were any sounds they especially enjoyed or disliked, and why. If time and resources allow, the therapist may encourage the group or individuals to notate their composition, or otherwise visualize a 'roadmap' for their creation. It may be helpful for the therapist to provide examples of unconventional musical notation or a painting capturing musical principles (such as Paul Klee's painting *Fugue in Red*). Some patients may be better able to articulate feelings and intentions once they have a visual representation of their sound combinations.

Artistic depictions. Ideally, by the end of this intervention patients will demonstrate an improved understanding of their perceptions of nature sounds. In addition to the materials needed for the scene listening intervention, the music therapist will need art supplies. Markers and paper will work fine, but a greater variety of visually expressive materials may better indicate patients' individual perceptions. If an outside space is available, the music therapist may want to challenge patients to use whatever objects they can find in their immediate environment (grass, rocks, flowers, etc.) to complete the task. Instruct patients to listen to the given auditory scene, and as they are listening to create a

visual representation of their experience using the given art supplies. (If the particular group of participants requires more structure, the music therapist may want to provide circles and instruct patients to make a mandala to represent their listening experience.) The music therapist will play a nature scene for 10-15 minutes, or for as long as it takes for patients to adequately express their experience artistically. Depending on the group length and artistic habits of the patients, the therapist may only get through one scene, or they may explore many. In any case, for each scene the facilitator should ask the group:

1. Tell me about your project.
2. How did you feel during that scene?
3. Did any sounds in particular stand out to you?

Nature walk planning. This intervention aims to improve patient awareness of nature sound resources. To prepare for this intervention, the music therapist should be knowledgeable about local hiking trails, parks, and other outdoor recreation areas where patients may be able to visit after discharge. Allowing patients to use computers or tablets for their own exploration is ideal, but printed information sheets compiled or created by the music therapist is acceptable if this is not possible. In either case, websites for federal recreation (recreation.gov) and the National Forest Service (fs.fed.us) are great resources for trails, descriptions of hikes, and directions to trailheads, among other pieces of information. Patients may just want to write down the trails that they would like to visit, or the music therapist may choose to utilize a more artistic approach, such as a folder- or poster-making aspect.

Patients should demonstrate ability to discuss why they are choosing the trails they are, including discussion about what sounds they expect to hear (such as bird song, wind through pine trees, gurgling creeks, city sounds), why these sounds are important (e.g. memory associations, emotional associations), and how they think these sounds will impact them individually (cognitively, emotionally, physically, etc.).

Assessing Efficacy

These interventions' success in an inpatient setting could be measured by the number of behavioral codes, personal holds, and instances of mechanical restraint before, during, and after intervention periods. Additionally, patient self-reports could prove useful to better understand the participant perspective. By the time participants are discharge-ready, they should be able to verbalize or otherwise demonstrate understanding of how nature sounds can affect mood. Ideally, patients will also be able to demonstrate a plan to use nature sounds to reduce anxiety and create a sense of control over their home environment upon discharge from the hospital.

Success outside of the inpatient setting could prove trickier to measure, in part because home settings can vary so greatly from one case to another. It may be best to not only rely on client self-reports, but also sound levels and quality before, during, and after intervention, as well as observational data related to apparent anxiety, depression, or irritation.

CHAPTER 6

IMPLICATIONS AND DISCUSSION

No one on any treatment team enjoys placing patients into restraints – personal or mechanical – especially when the patients are children. Behavioral codes are as anxiety-inducing for staff as they are for the adolescents, and it would be difficult to find anyone on the treatment team who would argue otherwise. If successful, nature-based music therapy interventions could have a new place in anxiety management and behavioral code prevention in inpatient adolescent psychiatric settings.

It is quite common during an initial assessment for adolescent patients to name few relaxation and mindfulness skills beyond sleeping or laying down – and many of these patients are quick to admit that even these techniques bring little comfort as they usually lead to boredom, restlessness, and racing thoughts. These patients often demonstrate very limited distress tolerance and inefficient use of self-regulation strategies as well. All of this is to say, psychiatric inpatient teenagers largely do not have adequate ability to keep themselves calm when something stressful happens. It is unreasonable to place such adolescents in a treatment area with so much abrasive auditory stimulation and expect them to cope; slamming doors, people talking, loud televisions, and booming radios at most times of day would cause anxiety in even the most mentally healthy people. Behavioral health hospitals and unit staff simply must do a better job of managing their sound environment inside and outside of active treatment, and the incorporation of nature sounds may be useful in tackling this issue all while providing a self-regulation tool for patients to use.

Inpatient exposure to and exploration of nature sounds in music therapy may not only provide immediate benefits in the hospital setting, but these interventions should be used as an opportunity to teach adolescents how to apply knowledge about the emotional benefits to their post-discharge placements. Therefore, there could also be important implications for patients in the home setting. It is no secret that environmental factors can become so stressful that adolescents require readmission to psychiatric inpatient facilities. If patients effectively learn how to apply nature-based music therapy within the home, they may benefit from increased mindfulness, calmness, and a better sense of control over their immediate environment. Over time, this may manifest as fewer psychiatric hospitalizations and overall better functioning. The music therapist may also choose to use treatment interventions as an opportunity to create better awareness among staff regarding their contributions to the sonic environment – staff maybe responsible for some of the same sounds that patients find uncomfortable or annoying, such as slamming doors, radios at high volumes, or having loud conversations when patients are trying to sleep.

In academic settings, these guidelines can be used as a standardized set of interventions for further research into the use of nature sounds in music therapy. As previously stated, there is relatively little research from the music therapy perspective regarding the effects of nature-based sounds and environmental awareness. Because studies from other health disciplines indicate certain sets of nature sounds may have a positive impact on anxiety levels, and other music disciplines demonstrate some benefit to acoustic environment mindfulness, it would benefit the field for music therapists to

draw their own evidence-based conclusions about utilizing nature sounds in treatment interventions.

Although individualized treatment is ideal in psychiatric music therapy, it is simply not a reality in most psychiatric hospitals at this time. Group treatment is the standard, and we must do what we can to create a positive change in patients despite inherent challenges. The use of nature sounds in music therapy, as part of a comprehensive music therapy program that assists patients in their overall development, both inside and outside their therapy groups, may be just one way that music therapists can create better outcomes for more patients.

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