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Analyzing Songs Used for Lyric Analysis With Mental Health Consumers Using Linguistic Inquiry and Word Count (LIWC) Software

Ashley M. Miller
University of Kentucky, osprey.card@gmail.com
Author ORCID Identifier:
http://orcid.org/0000-0002-5030-0584
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Ashley M. Miller, Student

Dr. Olivia Yinger, Major Professor

Dr. Michael Baker, Director of Graduate Studies

ANALYZING SONGS USED FOR LYRIC ANALYSIS WITH MENTAL HEALTH CONSUMERS USING LINGUISTIC INQUIRY AND WORD COUNT (LIWC) SOFTWARE

THESIS

A thesis submitted in partial fulfillment of the
requirements for the degree Master of Music in Music Therapy in the
College of Fine Arts at the University of Kentucky

By

Ashley Marie Miller

Lexington, Kentucky

Director: Dr. Olivia Yinger, Director of Music Therapy

Lexington, Kentucky

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ABSTRACT OF THESIS

ANALYZING SONGS USED FOR LYRIC ANALYSIS WITH MENTAL HEALTH CONSUMERS USING LINGUISTIC INQUIRY AND WORD COUNT (LIWC) SOFTWARE

Lyric analysis is one of the most commonly used music therapy interventions with the mental health population, yet there is a gap in the research literature regarding song selection. The primary purpose of this study was to determine distinguishing linguistic characteristics of song lyrics most commonly used for lyric analysis with mental health consumers, as measured by LIWC2015 software. A secondary purpose was to provide an updated song list resource for music therapists and music therapy students working with the mental health population. The researcher emailed a survey to 6,757 board-certified music therapists, 316 of whom completed the survey. Respondents contributed 700 different songs that they deemed most effective for lyric analysis with mental health consumers. The researcher used the LIWC2015 software to analyze the 48 songs that were listed by five or more music therapists. Song lyrics contained linguistic indicators of self-focused attention, present-focused attention, poor social relationships, and high cognitive processing. Lyrics were written in an informal, personal, and authentic style. Some lyrics were more emotionally positive, while others were more emotionally negative. While results must be interpreted with caution, it may be helpful to consider linguistic elements when choosing songs for lyric analysis with mental health consumers.

KEYWORDS: Lyric Analysis, Music Therapy, Mental Health, Song Selection, LIWC

Ashley Marie Miller
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By

Ashley Marie Miller

Olivia Swedberg Yinger
Director of Thesis

Michael Baker
Director of Graduate Studies

4/28/17

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CHAPTER ONE

INTRODUCTION

Mental illness impacts the lives of the majority of individuals in the United States in some way, whether through personal experience or interactions with friends, loved ones, and acquaintances. Mental illness can be broadly defined as a condition affecting an individual's thinking, mood, and/or behavior (American Psychiatric Association [APA], 2013). The prevalence rate is alarmingly high, with one in five adults in America experiencing a mental illness (not including substance use disorders) in any given year and one in five adolescents aged 13-18 experiencing a severe mental disorder at some point in their life (National Alliance on Mental Illness [NAMI], 2016). Substance use disorders, which are included as mental disorders in the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5), are also highly prevalent and frequently co-occur with other mental illnesses (APA, 2013). According to the 2015 National Survey on Drug Use and Health, around 8% of all individuals aged twelve and up had a substance use disorder in the past year (Center for Behavioral Health Statistics and Quality [CBHSQ], 2016).

Researchers investigating music therapy's effects on mental health have documented numerous positive outcomes (American Music Therapy Association [AMTA], 2006). 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" (AMTA, 2017, "What is Music Therapy?" para. 1). Music therapists

working with the mental health population use music to address non-musical goals such as self-expression, socialization, positive coping, improved problem solving, and self-awareness (AMTA, 2006). Lyric analysis is one of the most commonly used music therapy interventions within mental health treatment (Dvorak, 2016; Eyre & Lee, 2015; Silverman, 2007, 2009b) and involves the exploration and discussion of song lyrics and themes. Song choice is often guided by an individual music therapist's assessment of issues presented in the lyrics, though music therapists also choose songs according to personal preference and recommendations by consumers and other professionals (Silverman, 2009b). Choosing songs that will effectively address consumer goals can be a challenge for music therapists. There is a gap in the research literature regarding appropriate song selection for lyric analysis with the mental health population. An examination of linguistic trends in song lyrics commonly used for lyric analysis with consumers with mental health diagnoses could aid in narrowing this gap.

Operational Definitions

For the purposes of this study, the following operational definitions were used:

Mental illness is defined as a diagnosed DSM-5 mental disorder, excluding neurodevelopmental and neurocognitive disorders (APA, 2013; AMTA, 2015).

The *mental health population* is defined as all individuals with a mental illness (AMTA, 2015).

Lyric analysis (also known as lyric discussion, music listening/discussion, guided music listening and counseling, song analysis, song lyric discussion, or song

[lyric] discussion) is defined as a music therapy technique involving listening to a song and engaging in discussion centered on the lyric content for the purpose of assessing, validating, or addressing how the consumer understands, thinks, feels, or relates (Dvorak, 2016; Selvarajah, 2013).

A *consumer* is defined as a client, patient, or person receiving music therapy services (Silverman, 2009b).

Purpose

The primary purpose of this study was to examine the linguistic elements of song lyrics most commonly used for lyric analysis with consumers who have mental health diagnoses. Specifically, the following research question was addressed:

> What are distinguishing characteristics of song lyrics most commonly used for lyric analysis with the mental health population as measured by Linguistic Inquiry and Word Count (LIWC) software?

The secondary purpose of this study was to provide an updated song list resource for music therapists and music therapy students working with the mental health population. With this aim in mind, the following research question was addressed:

> What songs do music therapists deem most effective for lyric analysis in their work with the mental health population?

CHAPTER TWO

REVIEW OF LITERATURE

Mental Illness

The *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5), is the current classification system used by mental health professionals to diagnose mental disorders (APA, 2013). According to the American Psychological Association, a mental disorder is "a syndrome characterized by clinically significant disturbance in an individual's cognition, emotion regulation, or behavior that reflects a dysfunction in the psychological, biological, or developmental processes underlying mental functioning" (2013, p. 20). This disturbance in thinking, feeling, or behaving can be life altering for the countless individuals living with mental illness. The effects of mental illness extend to an individual's income, overall health, and life expectancy. Serious mental illness costs individuals an average of $16,306 in yearly income and costs the U.S. an average of $193 billion in lost earnings (Kessler et al., 2008). Additionally, individuals with mental illness have an increased risk of chronic medical conditions and die an average of 25 years earlier than peers due to treatable medical conditions (NAMI, 2016).

Anxiety Disorders

Anxiety disorders are the most common class of mental disorders in the United States, with a lifetime prevalence of 29% (Kessler et al., 2005). While the DSM-IV included posttraumatic stress disorder and obsessive-compulsive disorder under the anxiety disorders umbrella, they are categorized differently in the DSM-5 (APA, 2013). According to the DSM-5, anxiety disorders now include separation

anxiety disorder, selective mutism, specific phobia, social anxiety disorder, panic disorder, agoraphobia, generalized anxiety disorder, substance/medication-induced anxiety disorder, anxiety disorder due to another medical condition, other specified anxiety disorder, and unspecified anxiety disorder (APA, 2013). While there are many individual disorders, their commonalities include excessive fear and anxiety and associated behavior changes.

Anxiety is a common human emotion that is designed to serve an adaptive function (Rosen & Schulkin, 1998). It is closely related to fear, which is a response to a present threat. Anxiety differs from fear in that is the anticipation of future threat (APA, 2013). Anxiety warns an individual so that he or she can prepare for or avoid potentially harmful situations. In this way, anxiety can actually be extremely helpful for survival and success (Rosen & Schulkin, 1998). Anxiety at low to moderate levels over short periods of time is healthy and productive in that it actually improves performance by heightening arousal. If anxiety persists for longer periods of time or at higher intensity levels, it is no longer adaptive in nature and inhibits optimal performance due to exhaustion and loss of focus (Jacofsky, Santos, Khemlani-Patel, & Neziroglu, 2013).

When an individual experiences anxiety, or the anticipation of a threat, the body enters a state of hyper-alertness and may produce a fear response to combat the threat. Fear activates the sympathetic nervous system (SNS) to increase blood flow and oxygen delivery, resulting in faster heart rate and rapid breathing (Jacofsky et al., 2013). This is often called a fight-or-flight response because it prepares an individual to either combat or flee from perceived danger. While anxiety and fear

serve important protective functions, their activation in the absence of actual threat or out of proportion to a given threat becomes problematic (Rosen & Schulkin, 1998).

The symptoms of anxiety vary widely from person to person, but they can be physical, behavioral, emotional, cognitive, and/or psychological in nature. Physical symptoms of anxiety result from physiological changes due to SNS activation (Jacofsky et al., 2013). These symptoms may include a racing heart, a feeling of restlessness, shortness of breath, dizziness, chest pain, and fatigue. Emotional symptoms of anxiety may include feelings of unease, dread, apprehension, worry, fear, or panic. The physical and emotional symptoms can be so unpleasant that individuals begin to display behavioral symptoms of avoidance and/or self-medication in order to cope and escape. Additionally, anxiety can cause psychological symptoms including difficulty concentrating, difficulty with memory, and depressive symptoms like hopelessness and poor appetite (Jacofsky et al., 2013). Cognitive symptoms are often reflected in negative thoughts and thought patterns, which in turn feed into the cycle of anxiety. Inaccurate cognitive appraisal, or an individual's interpretation of a situation, is thought to play a major role in anxiety disorders (Clark & Beck, 2010; Jacofsky et al., 2013). Anxiety and fear responses can be more easily triggered when an individual overestimates a perceived threat and underestimates his or her coping abilities. Even so, there is no singular cause of anxiety disorders. Pathological anxiety is thought to result from the complex interaction of biological, psychological, and social factors (Jacofsky et al., 2013).

Major Depressive Disorder

While anxiety disorders are the most prevalent class of disorders, major depressive disorder is the single most prevalent lifetime disorder, with a prevalence of 17% (Kessler et al., 2005). Major depressive disorder alone is the leading cause of disability for individuals aged 15-44 (Anxiety and Depression Association of America [ADAA], 2016). According to the DSM-5, a major depressive episode (MDE) is marked by a period of at least two weeks wherein an individual experiences at least five of the following symptoms: depressed mood, decreased interest or pleasure in daily activities, weight fluctuations, sleep disturbances, psychomotor agitation or retardation, fatigue, feelings of worthlessness or excessive or inappropriate guilt, decreased concentration, and suicidal ideation or attempt (APA, 2013). Depressed mood may involve feelings of sadness, emptiness, hopelessness, or irritability. It is important to distinguish grief from a major depressive episode, though it is possible to experience both at once.

Over the years, many theories have emerged regarding the development and maintenance of clinical depression. One of the most prominent theories is Beck's cognitive model of depression, which has been modified to include research findings within cognitive neuroscience (Beck, 2008; Clark & Beck, 2010). In his model, Beck posits that depression is maintained by underlying dysfunctional attitudes or schemas, which may be activated by adverse events. These schemas hijack an individual's information processing system, which then directs that individual's attention to negative stimuli and results in an overall distorted negative interpretation of events (Beck, 2008). This negative interpretation then serves to

further reinforce the individual's schemas, creating a vicious cycle. This cycle of negative thinking and negative attentional focus becomes automatic and leads to a pervasively negative perception of reality (Beck, 2008). According to Beck's theory, environmental triggers and genetic and personality factors play a crucial role in the initial development of the negative schemas (Clark & Beck, 2010).

Pyszczynski and Greenberg (1987) developed a self-awareness theory of depression, noting that individuals with depression tend to demonstrate high levels of self-focus. While self-focused attention and self-evaluation are meant to serve an adaptive and self-regulatory function, individuals with depression tend to get stuck in a self-focused state as they ruminate on negative discrepancies between internalized standards and reality (Pyszczynski & Greenberg, 1987). This intensifies the negative effect associated with depression and can play a role in the breakdown of social relationships.

As with anxiety disorders, there is no single cause of major depressive disorder. Depression results from the complex interaction of a variety of factors and processes, many of which are still poorly understood. Causal factors may include biological differences, brain chemistry, hormones, and inherited traits, in combination with additional triggers like trauma and stress (Mayo Clinic, 2016).

Mental Illness and Suicide

Mental illness puts individuals at a drastically increased risk of suicide, and 90% of individuals who die by suicide experience mental illness (NAMI, 2016). Suicide is the tenth leading cause of death in the United States, with over 44,000 Americans dying by suicide every year and twenty-five times that number

attempting suicide (American Foundation for Suicide Prevention [AFSP], 2017). An even greater number of individuals experience suicidal ideation. Besides mental illness, risk factors for suicide may include family history of suicide, previous suicide attempt(s), history of alcohol and substance abuse, feelings of hopelessness, impulsive or aggressive tendencies, isolation, barriers to accessing mental health treatment, physical illness, loss, and easy access to lethal methods (Centers for Disease Control and Prevention [CDC], 2016).

The interpersonal theory of suicidal behavior is a fairly recent attempt at explaining the complex psychological phenomenon of suicidal behavior. This theory distinguishes the desire to engage in suicidal behavior from the capability to engage in suicidal behavior. According to the theory, thwarted belongingness (the unmet "need to belong") and perceived burdensomeness on others result in the desire for suicide. It is only when this desire overlaps with the capability for suicide that lethal or near-lethal suicide attempts occur (Van Orden et al., 2010). Capability for suicide involves increased pain tolerance and a lowered fear of death. This may result from factors such as impulsivity, exposure to suicidality, combat exposure, past suicide attempts, and/or childhood maltreatment.

The interpersonal theory offers a solid explanation as to why individuals with mental illness are more likely to experience suicidal ideation and attempt or commit suicide. Social isolation and inaccurate cognitive appraisal are common features of mental disorders and can easily lead individuals to feel that they don't belong and are a burden to others. The additional theoretical dimension of acquired

capability explains why only a fraction of individuals suffering from mental illness actually go on to attempt or commit suicide.

Summary

In summary, mental illness is a serious problem in the United States, directly affecting a disturbingly large fraction of the population. Individuals with mental disorders may experience a host of physical, emotional, behavioral, psychological, and cognitive symptoms, which interfere considerably with daily functioning. Anxiety disorders and major depressive disorder are the most common of the mental disorders and are believed to result from a combination of biological, psychological, and social factors. Mental illness is one of the top risk factors for suicide, which is one of the leading causes of death in the U.S. Music therapy is an effective nonpharmacological treatment for addressing a variety of mental health needs.

Music Therapy and Mental Illness

Music therapy involves the use of music interventions to address non-musical goals within the context of a therapeutic relationship. Music therapists work in a variety of settings with a wide range of patient/client populations. In a 2015 survey by the American Music Therapy Association, 19% of respondents reported serving the mental health population, a greater percentage than any other single client population category (AMTA, 2015). Mental health settings generally include treatment and community centers, drug/alcohol programs, forensic facilities, and inpatient psychiatric units (AMTA, 2015), but music therapists serve individuals with mental health diagnoses in other settings as well (e.g., general hospitals,

schools, geriatric facilities). Regardless of the setting, music therapists perform consumer assessments and devise individual treatment plans in order to meet the needs of each consumer.

Transdiagnostic Theory

Group music therapy is extremely common within psychiatric music therapy (Silverman, 2007); however, it can prove to be particularly challenging with this population due to the diversity of group member diagnoses. The transdiagnostic theory is a psychiatric music therapy treatment philosophy that is based on Fairburn, Cooper, and Shafran's theory of eating disorders (Silverman, 2015). According to this theory, less emphasis should be placed on specific diagnoses, particularly within a group context. Instead, the focus should be on actual treatment and on identifying the commonalities between individuals dealing with varying mental disorders. According to Silverman, commonalities may include behaviors, symptoms, thought patterns, issues, emotions, and stressors. There is considerable overlap in the struggles individuals with mental illness face, no matter the diagnosis. Focusing on common themes within music therapy can be productive, successful, and unifying for even the most diverse groups.

Goal Areas Addressed

Music therapists are trained to use evidence-based music interventions to meet a plethora of physical, psychological, emotional, cognitive and social needs. According to a survey of psychiatric music therapists, the goal areas most commonly addressed with mental health consumers include socialization, communication, self-esteem, coping skills, and stress reduction/management (Silverman, 2007). It is

important to recognize that consumer needs may be prioritized differently depending on the setting and length of treatment. The modern healthcare system understandably focuses its limited resources on the stabilization of acute symptoms of mental illness in as short a timeframe as possible. Therefore, inpatient goals tend to revolve around concerns for immediate safety. In these cases, music therapists can address goals such as medication management, psychoeducation, anger management, and impulse control. Within community settings or longer treatment programs, greater attention may be paid to less obvious symptoms of mental illness that make daily life a struggle. Music therapists may address issues such as loss, grief, trauma, loneliness, and stigma to aid in long-term mental health and stability (Jackson, 2015).

Research Outcomes

Research within the field of music therapy demonstrates the many benefits music therapy can have for individuals dealing with a range of mental disorders. Studies on music therapy with psychiatric inpatients have exhibited positive effects on satisfaction with life, knowledge of illness, knowledge of coping skills, treatment perceptions, response frequency and type, social support, working alliance, group attendance, and trust in the therapist (Silverman, 2009a, 2011, 2014). A recent systematic review of music therapy with acute psychiatric inpatients revealed that music therapy reduces positive and negative symptoms of mental illness, alleviates psychiatric symptoms, and improves interpersonal functioning (Carr, Odell-Miller, & Priebe, 2013). Additionally, a study by Grocke, Bloch, and Castle (2009) showed that music therapy sessions held within community settings significantly improved self-

reported quality of life, satisfaction with overall health, social support, opportunities for leisure activities, and physical pain for individuals with severe and enduring mental illness.

Summary

Music therapy is an effective non-pharmacological treatment option for individuals with mental illness. Services are provided within a variety of settings, including inpatient psychiatric units, community centers, and drug/alcohol programs, to name a few. While music therapists may work with mental health consumers on an individual basis, many provide group music therapy. The transdiagnostic model provides a helpful context for meeting the needs of individuals with different diagnoses by centering treatment around common themes and ideas. Consumer goals may include increasing coping skills, reducing stress, improving impulse control, and increasing knowledge of illness. Research shows that music therapy can successfully address and alleviate symptoms of mental illness.

Lyric Analysis and Mental Illness

Overview

Music therapists use many different techniques and interventions to address client and patient goals, but lyric analysis is one of the most popular within mental health treatment. In a recent survey study, 84% of music therapists working in mental health treatment settings reported using lyric analysis interventions (Eyre & Lee, 2015). In a broad sense, lyric analysis is simply the discussion of song lyrics. Within mental health treatment, this technique involves listening to a song and

engaging in discussion centered on the lyric content for the purpose of assessing, validating, or addressing how the music therapy consumer understands, thinks, feels, or relates (Dvorak, 2016; Selvarajah, 2013). Lyric analysis-type interventions go by many different names within the music therapy literature, including lyric discussion, music listening/discussion, guided music listening and counseling, song analysis, song lyric discussion, and song [lyric] discussion (Dvorak, 2016).

Although psychiatric music therapy is most often delivered in group format, lyric analysis can be used with individuals or groups (Silverman, 2007). Lyric analysis is used to address a wide variety of patient goals. Goals and treatment themes may include self-expression, emotion regulation, coping, change, support, addiction and abuse, problem identification, symptoms, goal setting, hope, positive thinking, acceptance, and self-awareness (Selvarajah, 2013; Silverman, 2009b).

Lyric Analysis Process

Lyric analysis interventions typically begin with the consumer(s) and therapist listening to a song together, either via a recording or played live by the therapist (Silverman, 2009b). Afterward, the music therapist uses verbal processing techniques to facilitate discussion centered on the lyrics. Dvorak's five-level framework for lyric analysis processing provides a format for facilitating this discussion within a group context (2016). The framework involves (1) processing the music itself, (2) reflecting on participants' responses, (3) discussing the effect on the group process, which encourages participants to consider and interact with other group members, (4) reflecting on participants' personal insights, and (5) transferring new insights to participants' lives (Dvorak, 2016). Processing the music

can be a non-threatening way to open up discussion while building rapport and trust. Each level within the framework requires additional trust, transparency, and openness from group members. Once a level of connection and trust is built, patients may feel more compelled to share deeper parts of themselves with the therapist and group, guided by applicable lines from within the song. This sharing in turn leads to the development of new insights and life applications. Although it was designed specifically for group-work, the aforementioned framework may be modified for work with individuals as well.

Song Selection

Since lyric analysis interventions completely revolve around songs and their lyric content, it is crucial that music therapists pay careful attention to song selection. When choosing music that will be most appropriate and effective for consumers, music therapists need to consider the therapeutic function of music. They must clearly understand the role of each musical element in meeting desired therapeutic outcomes (Hanson-Abromeit, 2015). While elements such as tempo, melody, rhythm, and harmonic structure must be carefully considered, lyrics in particular should be heavily scrutinized for their therapeutic value.

In spite of the importance of the choice of songs used by music therapists in lyric analysis, there is very little research to date on song selection. A 2009 survey study revealed that music therapists typically choose songs according to theme, personal preference, and consumer or professional recommendations (Silverman, 2009b). According to an article by Gardstrom and Hiller, specific song lyric considerations may also include literary elements and techniques and point of view

(2010). Additionally, music therapists may purposefully avoid certain songs based on content. A 2016 survey investigating censorship in adult psychiatric music therapy practice showed that the majority of respondents engaged in some form of music censorship (Joplin & Dvorak). The most commonly censored lyrics were profanity, drug references, and alcohol references, and the most commonly censored themes were misogyny, violence, sex, gang-related content, and misandry. The top reasons for censorship included potential negative impact on other group members, client discomfort, negative impact on the therapeutic relationship, negative impact on client self-esteem, and incitement of emotional distress. While this study provides useful information on lyrics, themes, songs, and genres of music that psychiatric music therapists commonly avoid, there is a gap in the research literature regarding appropriate song selection for lyric analysis with the mental health population. An examination of linguistic trends in song lyrics commonly used for lyric analysis with patients with mental health diagnoses could aid in narrowing this gap.

Linguistic Inquiry and Word Count (LIWC) Software and Mental Illness

Psychologists and related professionals have been analyzing word and language usage for decades, looking to identify linguistic patterns indicating underlying psychological processes (Tausczik & Pennebaker, 2010). Linguistic Inquiry and Word Count, or LIWC, is a computer-based text analysis program designed to quickly and effectively process written or transcribed verbal text utilizing a list of dictionary words representing 82 language dimensions (Pennebaker, Boyd, Jordan, & Blackburn, 2015). Researchers can pre-select which

language dimensions the software will analyze according to investigative purpose. LIWC was initially developed to gain a better understanding of how and why writing about personal and emotional experiences benefits psychological and physical health (Pennebaker, 1993, 1997; Pennebaker & Seagal, 1999). It was soon discovered that the writing itself revealed a lot about an individual's psychological state. According to Pennebaker, Mehl, and Niederhoffer (2003, p. 550), words can "convey psychological information over and above their literal meaning and independent of their semantic context." This makes LIWC a useful tool for understanding psychological characteristics of individuals receiving mental health treatment.

LIWC and Psychopathology

Suicide. An examination of word use in poetry written by suicidal versus nonsuicidal poets showed that suicidal individuals used more first person singular pronouns (I) throughout their careers and decreased their use of first person plural pronouns (we) over time, reflecting self-focused attention and poor social integration (Stirman & Pennebaker, 2001). A later case study analyzing a famous explorer's writings over the seven years leading up to his suicide revealed increases in first person singular pronoun use, decreases in first person plural pronoun use, and increases in negative emotion word (hurt) use over time (Baddeley, Daniel, & Pennebaker, 2011). While this was a single account and the results cannot be generalized, the findings of this case study are indicative of the self-focused attention, social withdrawal, and negative affect typical of individuals with depression and suicidal ideation. Furthermore, a recent analysis comparing the

language in suicide notes and the language in legacy tokens (i.e. communications designed to take credit for and explain the motivations behind an attack) of active shooters with a sample of over 20,000 student writings showed that suicide notes could be differentiated by increased self-references and future tense (will) usage, while legacy tokens could be differentiated by increased anger references (hate) and negative emotion references (Egnoto & Griffin, 2016). This study shows that there are linguistic differences between suicidal and homicidal writings. Suicidal writings were more self-focused and future oriented, while legacy tokens were more angry and emotionally negative.

Mental Disorders. A study looking at differences in language use between depressed, formerly-depressed, and never-depressed college students showed that depressed individuals used more negatively valenced words and first person singular pronouns in their writing, supporting Beck's cognitive model of depression and Pyszczynski and Greenberg's self-focus model of depression (Rude, Gortner, & Pennebaker, 2004). A comparison between the writing of psychiatric outpatients and nonclinical controls showed that psychiatric outpatients used fewer optimism/energy related words (certainty); fewer discrepancy (should), inhibition (block), and tentativeness (maybe) words; fewer exclusion-related words (but); and fewer body-related words (ache) (Junghaenel, Smyth, & Santner, 2008). Optimism/energy words reflected the degree of optimism in the writing, and discrepancy, inhibition, and tentativeness words reflected the degree of cognitive processing. Patient diagnoses included schizophrenia and other psychotic disorders as well as bipolar and related disorders, which could explain the low rate of

cognitive process words. Cognitive processing reflects an individual's attempts to organize and make sense of their environment, and this is extremely difficult for patients experiencing psychosis, or disconnection from reality.

Trauma. A 2004 study analyzing public online journal entries before and after the September 11, 2001 attacks showed immediate psychological changes in response to the attacks, evidenced by increased expression of negative emotions, cognitive processing, social orientation, and psychological distancing (Cohn, Mehl, & Pennebaker). Over the following two weeks after the attacks, mood and social orientation returned to normal, but cognitive processing actually dropped below its baseline level. After six weeks, psychological distancing remained elevated, and social orientation continued to drop. This may reflect a healthy and "typical" pattern of coping with trauma: Individuals initially felt free to express what they were feeling and seemingly found comfort and stability in their social relationships. They processed the trauma on a cognitive level, while distancing themselves as a protective measure.

A study from 2010 used LIWC and a measure of posttraumatic stress symptoms to explore how written emotional disclosure reflected the coping abilities of adolescents who had recently experienced the death of a classmate (Margola, Facchin, Molgora, & Revenson). Students were prompted to write about their emotional reactions each day for three consecutive days. They were administered the Impact of Events Scale-Revised (IES-R) at baseline and again at one week and four months' postwriting. Results of the study showed that adolescents who remained highly distressed across time used more self-references, more causation

words (because), more words reflecting inhibition, and fewer social (talk) and cognitive processing words (cause) in comparison with adolescents who displayed high distress followed by improvement over time. In contrast, the adolescents who displayed a recovery pattern of adjustment used more cognitive processing words, specifically reflecting insight (think), tentativeness, and discrepancy.

More recently, researchers analyzed twitter data across three case studies to look at the effects of violence near or on college campuses (Jones, Wojcik, Sweeting, & Silver, 2016). They found significant increases in general negative emotion expression and event-related negative emotion expression immediately following the traumatic events, which decreased over the course of the following weeks. This progression of negative emotion expression mirrors the findings in the September 11, 2001 journal entries, supporting the idea that healthy coping requires short-term negative emotion expression.

LIWC and Song Lyrics

LIWC has been used to analyze song lyrics within several different contexts. Researchers have been able to study how the music of groups and artists like The Beatles (Petrie, Pennebaker, & Sivertsen, 2008) and Bob Dylan (Czechowski, Miranda, & Sylvestre, 2015) evolved over time. They have also looked at linguistic indicators of psychopathology within song lyrics. A study comparing the lyrics of suicidal and non-suicidal songwriters showed that suicidal songwriters used more future-tense verbs and fewer death-themed words (kill) (Lightman, McCarthy, Dufty, & McNamara, 2007). While this seems counterintuitive, the authors suggested that it could be due to the therapeutic effects of writing and/or to features of song

lyrics that set them apart from other forms of writing. A similar study on lyrics written by songwriters in the "27 Club", a group of musicians who either committed suicide or died tragically at the age of 27, (Markowitz & Hancock, 2016) produced results more in line with the self-focused attention found in earlier studies on suicidality (Baddeley et al, 2011; Stirman & Pennebaker, 2001). The researchers found that song lyrics written by suicidal musicians compared to non-suicidal musicians contained more first-person singular pronouns and affect terms (happy), and they were written with more verbal immediacy (less psychological distancing). Lyrics also reflected a more dynamic writing style, which tends to be very emotional and informal (Markowitz & Hancock, 2016).

While most LIWC studies have analyzed written text, poetry, and song lyrics in order to gain information about the writers, there has been some interest in looking at the underlying psychological processes of music consumers. An analysis of *Billboard* No. 1 songs across changes in U.S. social and economic conditions showed that people tended to prefer listening to songs with more future references, more frequent references to social processes and intergroup themes, and more words per sentence during threatening times, suggesting the underlying needs for hope, social affiliation, and meaningful exploration of thoughts (Pettijohn & Sacco, 2009). A 2011 study looked at how changes in popular U.S. song lyrics over time reflected large-scale changes in psychological traits and emotions (DeWall, Pond, Campbell, & Twenge). The researchers analyzed the most popular songs from 1980-2007 and found that popular song lyrics have become more self-focused, socially disconnected, angry and antisocial, and less positive over time. These changes

reflect U.S. cultural shifts and are evidenced by increased use of first-person singular pronouns and words related to anger and antisocial behavior and decreased use of first-person plural pronouns, social interaction words, and positive emotion words (good).

LIWC and Music Therapy

Within the field of music therapy, LIWC has been used to examine the linguistic characteristics of songs commonly used by music therapists with older adult clients (Yinger & Springer, 2016). A similar process could be helpful in looking at the linguistic characteristics of songs commonly used by music therapists with the mental health population. While consumers typically do not actively write lyrics during lyric analysis interventions, linguistic elements within commonly used songs may suggest underlying psychological processes with which these consumers relate. LIWC could provide helpful insight into appropriate song selection for lyric analysis interventions with the mental health population. As previously stated, the primary purpose of this study was to examine the linguistic elements of song lyrics most commonly used for lyric analysis with consumers who have mental health diagnoses. Specifically, the following research question was addressed:

> What are distinguishing characteristics of song lyrics most commonly used for lyric analysis with the mental health population as measured by Linguistic Inquiry and Word Count (LIWC) software?

The secondary purpose of this study was to provide an updated song list resource for music therapists and music therapy students working with the mental health population. With this aim in mind, the following research question was addressed:

What songs do music therapists deem most effective for lyric analysis in their work with the mental health population?

CHAPTER THREE

METHODOLOGY

This study was submitted to the Institutional Review Board (IRB) of the University of Kentucky for exemption certification due to the use of survey procedures where no identifying information was collected and no more than minimal risk was posed to research participants. An exemption from IRB approval (See Appendix A) was received prior to conducting the study. The IRB considered this study to be exempt because participant responses and identities are not linked in any way.

Participants

The researcher obtained from the Certification Board for Music Therapists (CBMT) the email addresses of all board-certified music therapists who opted to receive emails through CBMT (N = 6,757). The sample included the entire population of board-certified music therapists who opted to receive emails through the CBMT. One email address was invalid and one email account was no longer in use. A total of 528 board-certified music therapists responded to the researcher regarding the online survey and 497 completed the survey. Of the 31 respondents who did not complete the survey, 11 stated that they were ineligible to participate in the survey due to not currently using lyric analysis and/or working with the mental health population, 12 stated they were ineligible due to being retired or not currently working as a music therapist, 6 requested to be removed from the researcher's email list for unspecified reasons, and 2 reported difficulty with the survey link.

Instrumentation

Survey

The survey tool used in this study was created by the researcher and consisted of three different sections: (a) demographic information; (b) music therapy background/current work; and (c) use of lyric analysis. The survey contained 11 questions and was designed to collect data regarding songs used by music therapists for lyric analysis with consumers who have mental health diagnoses. Several components were modified from survey tools used in earlier studies by Silverman (2007; 2009b), which surveyed psychiatric music therapists regarding current practices and songs used for lyric analysis. The instrument used in the current study is discussed in greater detail in the following sections and can be found in Appendix C.

Demographic Information. The survey began by asking participants if they currently use lyric analysis with one or more consumers with a mental health diagnosis (excluding neurodevelopmental and neurocognitive disorders) in any setting. The survey instructed music therapists to discontinue the survey if they answered no to this question. The initial question was used to ensure that music therapists not using lyric analysis with the mental health population in their current practice would not be included in the study. The next three questions were presented in a multiple-choice format and collected general demographic information regarding gender, age, and ethnicity/race. The questions and response options were based on the 2015 American Music Therapy Association (AMTA)

Member Survey and Workforce Analysis (AMTA, 2015), which is an annual survey of all current AMTA members.

Music Therapy Background/Current Work. This section consisted of five questions in multiple-choice and check-box format, used to assess each participant's professional music therapy experience. As with the demographic information section, questions and response options were based on the AMTA Member Survey and Workforce Analysis (AMTA, 2015). Questions collected information on highest level of education, theoretical orientation, affiliated region, years of experience as a music therapist, and current work setting(s).

Use of Lyric Analysis. This section consisted of one check-box question and one fill-in-the-blank question made up of 15 sub-questions. The check-box question was used to collect data on the setting(s) in which music therapists currently use lyric analysis with one or more consumers with a mental health diagnosis. The fill-in-the-blank question asked participants to list the five most effective songs they use for lyric analysis with mental health consumers, along with the name of the artist and the primary treatment theme/objective for each song.

LIWC2015 Software

Linguistic Inquiry and Word Count 2015 software, or LIWC2015, was used to analyze the lyrics of songs returned by music therapists via the study survey. LIWC2015 is a computer-based text analysis program that analyzes written or transcribed verbal text, calculating word percentages across 82 different language dimensions (Pennebaker, Boyd, et al., 2015).

Procedure

Survey

The researcher purchased email addresses from CBMT for all board-certified music therapists who opted to receive CBMT emails. A cover letter that described the nature of the study, instructions for survey participation, and terms of consent was included the text of each survey email (See Appendix B). Participants completed the survey and were able to skip questions. Survey submission indicated participant consent for the current study. A total of 497 surveys were submitted, but only 316 met inclusion criteria. Although participants were instructed to discontinue the survey if they did not use lyric analysis with mental health consumers, a number of respondents completed and submitted the survey in spite of not using lyric analysis in mental health. Surveys were excluded if participants answered "no" to the first question regarding current use of lyric analysis with the mental health population (*n* = 174). Six surveys were excluded because participants did not answer the first question. One survey was excluded due to responses that were fantastical, leading the researcher to believe that the questionnaire was filled out in jest.

The REDCap survey was published online for a five-week window after the initial email was sent inviting potential participants. Follow-up emails were sent after two weeks and four weeks to potential participants who had not yet completed the survey, reminding them of the survey closure date. The survey was closed after five weeks and no further data were accepted. Surveys were submitted through the secure data software REDCap in a non-identifying format.

Song List Resource

The researcher compiled all of the songs reported by survey respondents into an alphabetized list and corrected responses that were off-set due to respondents reporting answers in the wrong text boxes. If more than one song or artist was listed by survey respondents within a single survey blank, the researcher only included the first one. If no artist was listed, the researcher located the original artist or identified the song as a traditional song or hymn. The researcher corrected artist and song title errors and removed duplicates from the list and looked up song lyrics and recordings for each song using a variety of online lyric websites, Spotify (https://www.spotify.com), and YouTube (https://www.youtube.com). Table 1 shows each lyric website, publisher, year of latest update, URL, and number of songs from the website used in this study. The researcher excluded songs for which lyrics or a recording could not be found. Songs without lyrics were excluded based on the researcher's operational definition of lyric analysis. Children's books set to music were excluded because they were not originally written as songs.

Table 1

Lyric Website Information

Website Title	Publisher	Year	URL	# of Songs
LyricWikia	Wikia, Inc.	2017	Lyrics.wikia.com	662
AZLyrics	AZLyrics.com	2017	Azlyrics.com	10
Musixmatch	Musixmatch	2017	Musixmatch.com	6
Hymnlyrics.org	Hymnlyrics.org	2017	Hymnlyrics.org	5
Jana Stanfield	Jana Stanfield's Keynote Concerts	2017	Janastanfield.com	2
Jewish Learning Matters	The Rosenfeld Foundation	2015	Jewishlearningmatters.com	2
Wikipedia: The Free Encyclopedia	Wikimedia Foundation	2017	Wikipedia.org	2
AllTheLyrics.com	AllTheLyrics.com	2017	Allthelyrics.com	1
Ayla Nereo	Bandcamp, Inc.	2017	Aylanereo.bandcamp.com	1
The Disney Wiki	Wikia, Inc.	2017	Disney.wikia.com	1
Genius	Genius Media Group, Inc.	2017	Genius.com	1
Kidsongs	Together Again Video Productions, Inc.	2016	Kidsongs.com	1
LyricsMode	LyricsMode	2017	Lyricsmode.com	1
Lyrics Translate	LyricsTranslate.com	2017	Lyricstranslate.com	1
MetroLyrics	CBS Interactive Inc.	2017	Metrolyrics.com	1
NewReleaseToday	NRT Media Inc.	2017	Newreleasetoday.com	1
RoySakuma.net	Roy Sakuma	2015	Roysakuma.net	1

LIWC2015 Analysis

The researcher compiled songs listed by five or more music therapists into a separate list of most commonly used songs for lyric analysis with the mental health population. When there were multiple versions of the same song listed, the researcher included the most frequently listed version for analysis so that multiple versions of the same song were not analyzed.

Lyrics for each song were copied and pasted into separate Microsoft Word files. The researcher and two research assistants then listened to recordings of every song with a specified artist in order to correct lyric mistakes. For traditional songs and hymns, lyric files were checked against lyrics recorded in several songbooks commonly used by music therapists and music therapy students (Blood & Patterson, 1998; Fox & Weissman, 2007; Hackett, 1998; Simon, 1975). Two of the consulted songbooks were cited in a 2016 study analyzing songs most commonly used by music therapists with older adult clients (Yinger & Springer, 2016), and the remaining songbooks were in the research advisor's personal collection. Song files were prepared for LIWC2015 analysis in five steps: (1) words representing song progression markers (e.g., verse, chorus, solo) were removed; (2) spelling errors were corrected; (3) musical non-word sounds (e.g., mmm, nah, uh) were removed; (4) uncommon contractions were spelled out to prevent them from being counted as possessive nouns (e.g., Sally's, father's, heart's); and (5) common slang and abbreviations were converted into full words (e.g., dunno, walkin', homie). Once the song files were prepared, the researcher ran them through the LIWC2015 software,

generating word count outputs for 82 language dimensions, predominantly displayed as percentages of total word count.

Data Analysis

Data were analyzed using descriptive statistics and graphic analysis.

CHAPTER FOUR

RESULTS

This study used a survey to examine music therapists' song selection for lyric analysis with the mental health population. A total of 6,757 music therapists were invited via email to participate in the survey. One email did not go through and one email returned an automated message that the account is not longer in use. During the five-week window, a total of 528 music therapists emailed a response to the survey, and 497 completed various parts the survey. Of the 497 who completed the survey, 316 were eligible to be included in the analysis. Although the response rate seems low, it was estimated that approximately 1,284 music therapists currently work with mental health consumers across settings and would be eligible to participate in the survey (AMTA, 2015; H. Burkett, personal communication, March 8, 2017). Using this estimate, the response rate was approximately 25%. Descriptive statistics were computed for all variables in the survey tool and for LIWC 2015 outputs.

Demographic Information

As previously noted, 316 music therapists completed the survey through REDCap and were eligible for inclusion in the study. As described in the cover letter, individuals were allowed to skip any survey questions. Because participants did not answer every question, results are based off of the total number of participants who answered each question individually.

Of the 314 participants who indicated gender, 83.8% identified as female (n = 263), 15.0% identified as male (n = 47), and 1.3% identified as "other" (n = 4). No

participants identified as transgender. Written responses for "other" included: "all"; "male, female, and transgender"; and "both male and female." Of all the participants who indicated age (N = 315), the largest number fell into the age range 20-29 years (n=117), accounting for 37.1% of responses. The majority of participants (73%) were under age 40 (n=230). One participant chose not to indicate age. See Table 2 below for a complete age breakdown.

Table 2

Ages of Participants (N=315)

Age Range	***n***	**%**
<20 years	6	1.9%
20-29 years	117	37.1%
30-39 years	107	34.0%
40-49 years	32	10.2%
50-59 years	35	11.1%
60-69 years	13	4.1%
70+ years	5	1.6%

The majority of participants (N=314) reported their ethnicity/race as Caucasian/White (n=280, 89.2%), followed by Multiracial (n=12, 3.8%), Black or African American (n=7, 2.2%), and Asian/Asian American (n=7, 2.2%). Remaining participants identified as Hispanic/Latino/Spanish (n=4, 1.3%) or other (n=4, 1.3%). Written responses for "other" included: "all," "Middle Eastern," and "Black American and White American." No participants identified as American Indian/Alaska Native or Pacific Islander.

Music Therapy Background/Current Work

Over half of participants (N=315) indicated that their highest level of education was a master's degree (n=162, 51.4%), while remaining participants'

highest level of education was either a bachelor's degree (*n*=146, 46.3%) or a doctoral degree (*n*=7, 2.2%). All participants (*N*=316) answered the question about theoretical orientation. This question was formatted so that participants could select more than one option; therefore, the total percentage is greater than 100%. The options most frequently selected were Behavioral (*n*=179, 56.6%), Humanistic/Existential (*n*=165, 52.2%), and Cognitive (*n*=165, 52.2%). See Table 3 below for a breakdown of participants' theoretical orientations.

Table 3

Theoretical Orientation of Participants (N=316)

Orientation	***n***	**%**
Behavioral	179	56.6%
Humanistic/Existential	165	52.2%
Cognitive	165	52.2%
Holistic	122	38.6%
Psychodynamic	106	33.5%
Neuroscience	63	19.9%
Other	25	7.9%

Note. Responses for "other" included: music-centered, Dialectical Behavior Therapy (DBT), faith-based, person/client-centered, eclectic, cognitive behavioral, experiential, soulmaking, Neurosequential Model of Therapeutics, trauma-focused, transpersonal, developmental, biomedical, mindfulness-based, and unaffiliated theoretical orientation.

Of the seven geographical regions defined by the American Music Therapy Association (AMTA, 2015), the largest number of participants (*N*=312) reported affiliation with the Mid-Atlantic region (*n*=74, 23.7%), followed by the Southeastern region (*n*=59, 18.9%) and the Great Lakes region (*n*=58, 18.6%). See Table 4 for a complete breakdown of participants' affiliated regions.

Table 4

Affiliated Region of Participants (N=312)

Affiliated Region	***n***	**%**
Mid-Atlantic	74	23.7%
Southeastern	59	18.9%
Great Lakes	58	18.6%
Western	48	15.4%
Southwestern	30	9.6%
Midwestern	29	9.3%
New England	14	4.5%

Of the 315 participants who reported years of experience as a music therapy professional, the greatest number had 1-5 years of experience (*n*=121, 38.4%). Refer to Table 5 for a breakdown of years of music therapy experience.

Table 5

Years of Professional Music Therapy Experience (N=315)

Years of Experience	***n***	**%**
<1	28	8.9%
1-5	121	38.4%
6-10	73	23.2%
11-15	38	12.1%
16-20	17	5.4%
21-25	9	2.9%
26-30	11	3.5%
30+	18	5.7%

Work setting options were defined by the American Music Therapy Association (AMTA, 2015). Participants were free to select as many options as applied to their current work. The majority of participants (*N*=315) reported currently working in the mental health setting (*n*=225, 71.4%), which included child/adolescent treatment centers, community mental health centers, drug/alcohol

programs, forensic facilities, and inpatient psychiatric units. Table 6 offers a complete breakdown of participants' current work settings.

Table 6

Work Setting (N=315)

Work Setting	***n***	**%**
Mental Health Setting	225	71.4%
Medical Setting	86	27.3%
Self Employed & Private Practice	86	27.3%
Geriatric Facility	68	21.6%
Children's Facility/School	48	15.2%
Other	18	5.7%

Note. Responses for "other" included: day rehab for adults with intellectual and developmental disabilities (IDD), Medicaid waiver service provider, physical therapy practice, correctional facility/state prison, state developmental center, Intermediate Care Facility for the Developmentally Disabled (ICF/DD), state-run facility for developmentally disabled adults with multiple diagnoses, hospice and palliative care, community-based clinic, home-based outpatient care for veterans with traumatic brain injury (TBI) and post-traumatic stress disorder (PTSD), non-profit, women's empowerment, university clinic, chronic pain and bereavement.

Use of Lyric Analysis

The majority of participants (*N*=315) indicated that they currently use lyric analysis with one or more consumers with a mental health diagnosis within the mental health setting (*n*=228, 72.4%). See Table 7 for a complete breakdown of the settings in which participants currently use lyric analysis with mental health consumers.

Table 7

Setting Where Participants Use Lyric Analysis (N=315)

Setting	***n***	**%**
Mental Health Setting	228	72.4%
Medical Setting	75	23.8%
Self Employed & Private Practice	61	19.4%
Geriatric Facility	45	14.3%
Children's Facility	21	6.7%
Other	14	4.4%

Note. Responses for "other" included: day rehab for adults with intellectual and developmental disabilities (IDD), Medicaid waiver service provider, physical therapy practice, correctional facility, state-run facility for developmental disabled with multiple diagnoses, community-based clinic, home-based outpatient care for veterans with TBI and PTSD, women's empowerment, hospice and palliative care, chronic pain and bereavement.

Of the 316 music therapists who completed the survey and were eligible for inclusion in the study, 285 (90.2%) listed one to five of their most effective songs for lyric analysis with mental health consumers. Respondents reported a total of 1,333 songs, and 700 different songs were included in the song list resource after accounting for duplicates and necessary exclusions. See Figure 1 for a song inclusion flow chart, and see Appendix D for the full song list resource.

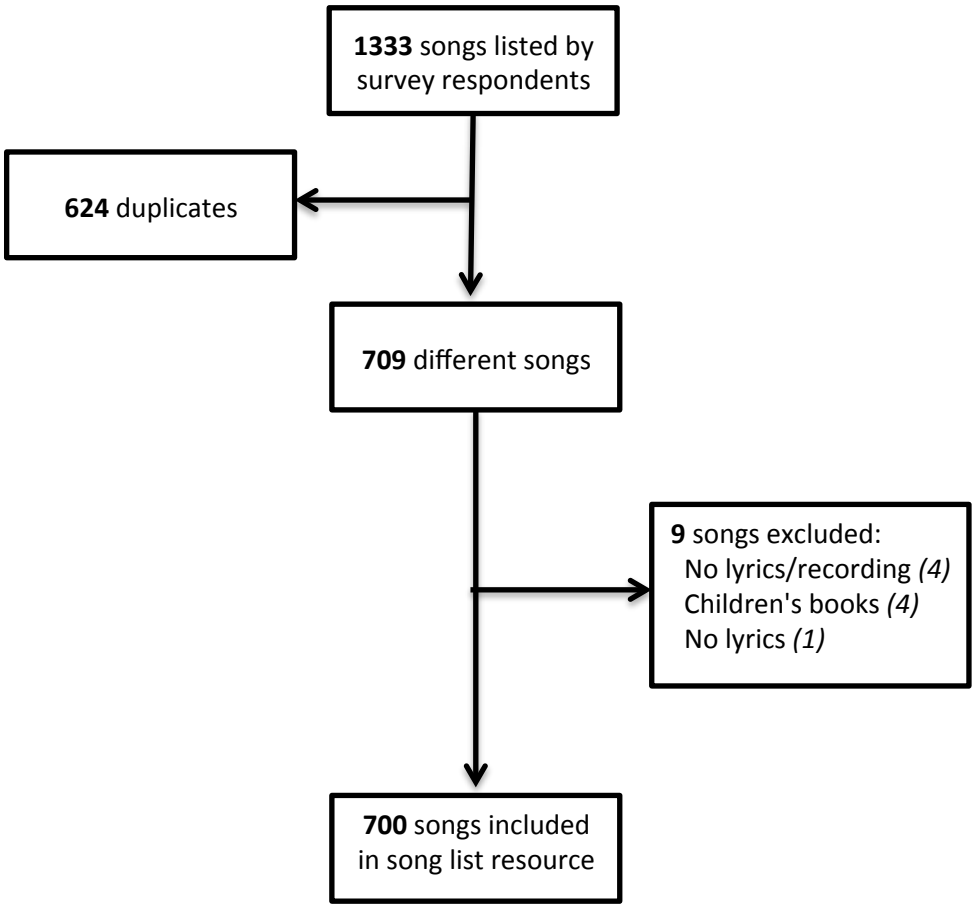

Figure 1. Flow of Songs Included in Song List Resource

A total of 283 survey respondents (89.6%) listed the primary treatment theme/objective for one to five of their most effective songs for lyric analysis. When respondents wrote in multiple treatment themes/objectives for one song, the researcher only reported the first one. There were 1,314 primary treatment themes/objectives listed. After duplicates were accounted for and similar themes/objectives were grouped together, there were 134 different treatment themes/objectives. See Table 8 for the twenty most frequently listed themes/objectives, and see Appendix E for the complete list.

Table 8

Top Twenty Primary Treatment Themes/Objectives

Treatment Theme/Objective	*n*
Feelings/Emotions	78
Coping skills	77
Support	72
Empowerment	58
Addiction/Substance abuse	55
Self-esteem	54
Change	49
Relationships	49
Identity	44
Setting and achieving goals	44
Acceptance	42
Self-examination	27
Hope	26
Motivation	25
Overcoming obstacles	25
Positive thinking	24
DBT skills	23
Mental health/illness	23
Grief/Loss	22
Choices	21

The six most frequently addressed treatment themes/objectives were feelings/emotions, coping skills, support, empowerment, addiction/substance abuse, and self-esteem.

Primary Research Question

What are distinguishing characteristics of song lyrics most commonly used for lyric analysis with the mental health population as measured by Linguistic Inquiry and Word Count (LIWC) software?

There were 48 different songs listed by five or more music therapists as their most effective songs for lyric analysis with the mental health population (See Table 9).

Table 9

Most Commonly Used Songs for Lyric Analysis With the Mental Health Population

Song	*n*	Artist
Let It Be	31	The Beatles* (30) / Paul McCartney (1)
Lean on Me	29	Bill Withers
Bridge Over Troubled Water	25	Simon and Garfunkel* (22) / Paul Simon (2) / Art Garfunkel (1)
Man in the Mirror	20	Michael Jackson
Brave	16	Sara Bareilles
Drive	16	Incubus
Fight Song	16	Rachel Platten
Landslide	16	Fleetwood Mac* (13) / Stevie Nicks (3)
What a Wonderful World	13	Louis Armstrong
I Can See Clearly Now	12	Johnny Nash* (10) / Jimmy Cliff (2)
Perfect* (10) / F**kin' Perfect (2)	12	P!nk
The Climb	12	Miley Cyrus
Beautiful	11	Christina Aguilera
Hurt	11	Johnny Cash* (6) / Nine Inch Nails (5)
Unwell	10	Matchbox Twenty
I Won't Back Down	9	Tom Petty
Times Like These	9	Foo Fighters
True Colors	9	Cyndi Lauper* (6) / Phil Collins (3)
You've Got a Friend	9	Carole King* (4) / Carole King & James Taylor (3) / James Taylor (2)
3 Things	7	Jason Mraz
7 Years	7	Lukas Graham
Demons	7	Imagine Dragons
Desperado	7	Eagles
Don't Worry, Be Happy	7	Bobby McFerrin
Hand in My Pocket	7	Alanis Morissette
Starting Over	7	Macklemore & Ryan Lewis
Try	7	Colbie Caillat
Under the Bridge	7	Red Hot Chili Peppers
Be OK	6	Ingrid Michaelson

Table 9, continued

Song	*n*	Artist
Count On Me	6	Bruno Mars
Don't Stop	6	Fleetwood Mac
Firework	6	Katy Perry
Human	6	Christina Perri
My Favorite Things	6	Julie Andrews
Say	6	John Mayer
Stand by Me	6	Ben E. King
Three Little Birds	6	Bob Marley & The Wailers
A Change Is Gonna Come	5	Sam Cooke
Amazing Grace	5	hymn
Blackbird	5	The Beatles
Breathe (2 AM)	5	Anna Nalick
I Hope You Dance	5	Lee Ann Womack
Imagine	5	John Lennon
Lost Boy	5	Ruth B
Numb	5	Linkin Park
Rise Up	5	Andra Day
Shake It Out	5	Florence + the Machine
You Gotta Be	5	Des'ree

Note. For songs with more than one version listed by music therapists, only the most frequently listed version was included in the LIWC analysis to avoid lyric duplication. Analyzed versions are denoted by an asterisk (*) for those songs with multiple titles or multiple artists.

The LIWC2015 software analyzed the 48 most commonly used songs, generating word count data across 82 linguistic domains. Means and standard deviations for each domain are reported in Appendix F. Aside from total word count, words per sentence, and the four summary language variables, means represent percentages of total word count. The four summary language variables are based on algorithms involving other LIWC domains and are reported on a 100-point scale ranging from 0 to 100 (Pennebaker, Booth, Boyd, & Francis, 2015).

Domains of particular interest were selected based on past research findings and on the researcher's assessment of relevance to the current study. Means and standard deviations for these domains are reported below in Table 10.

Table 10

LIWC Domains of Interest

LIWC Domains	**Mean**	***SD***
Word count	284.25	115.45
Summary Language Variables		
Analytical thinking	25.22	22.89
Clout	53.21	35.45
Authentic	73.34	31.95
Emotional tone	51.34	34.81
General Descriptors		
Dictionary words	94.11	4.83
Standard Linguistic Dimensions		
Personal pronouns	15.72	5.12
1st person singular	8.98	5.48
1st person plural	0.77	1.44
2nd person	5.15	4.63
3rd person singular	0.29	0.65
3rd person plural	0.54	0.76
Negations	2.94	3.56
Psychological Processes		
Affective processes	6.96	5.34
Positive emotion	4.39	4.11
Negative emotion	2.54	2.59
Social processes	11.21	7.48
Family	0.27	0.51
Friends	0.4	0.82
Cognitive processes	11.84	5.62
Perceptual processes	5.69	5.69
Biological processes	2.32	1.59
Sexual	0.03	0.12
Drives	7.18	5.27
Affiliation	1.89	2.11
Time orientations		
Past focus	2.83	3.19
Present focus	18.85	8.53
Future focus	3.53	3.24
Personal concerns		
Death	0.15	0.43
Informal language	1.97	2.34
Swear words	0.07	0.19

Word Count and Dictionary Words. Total word count was highly variable (*M* = 284.25, *SD* = 115.45), with a range of 102 to 633 words per song. On average, 94.11% of all words in song lyrics were recognized by LIWC2015 dictionaries (*SD* = 4.83).

Summary Language Variables. The four summary language variables were calculated by LIWC as scores on a scale of 0 to 100. Song lyrics scored low overall on analytical thinking (*M* = 25.22, *SD* = 22.89) and high overall on authentic language (*M* = 73.34, *SD* = 31.95). Scores for clout (*M* = 53.21, *SD* = 35.45) and emotional tone (*M* = 51.34, *SD* = 34.81) were in the middle.

Standard Linguistic Dimensions. Personal pronouns made up 15.72% of total word count (*SD* = 5.12). There were more first person singular pronouns (*M* = 8.98%, *SD* = 5.48) than all other types of pronouns combined, though second person pronouns had the next highest rate by far at 5.15% (*SD* = 4.63). Negations made up 2.94% of word count (*SD* = 3.56).

Psychological Processes. Cognitive process words (*M* = 11.84%, *SD* = 5.62) and social process words (*M* = 11.21%, *SD* = 7.48) were prominent in the song lyrics, though specific social references to family (*M* = 0.27%, *SD* = 0.51) and friends (*M* = 0.4%, *SD* = 0.82) were relatively low. Affective process words made up 6.96% of word count (*SD* = 5.34), and positive emotion words (*M* = 4.39%, *SD* = 4.11) tended to outnumber negative emotion words (*M* = 2.54%, *SD* = 2.54), though there was some variability.

Perceptual process words made up 5.69% of total word count (*SD* = 5.69), and words related to seeing (*M* = 2.88%, *SD* = 4.86) outnumbered words related to

hearing (*M* = 1.56%, *SD* = 3.67) and feeling (*M* = 1.11%, *SD* = 1.16). Within the biological process words domain (*M* = 2.32%, *SD* = 1.59), sexual words were very infrequent (*M* = 0.03%, *SD* = 0.12). All words related to specific drives or motives made up 7.18% of total word count (*SD* = 5.27), while words specifically associated with affiliation made up 1.89% of total word count (*SD* = 2.11).

With regard to time orientations, present focus words (*M* = 18.85%, *SD* = 8.53) greatly outnumbered future focus words (*M* = 3.53%, *SD* = 3.24) and past focus words (*M* = 2.83, *SD* = 3.19). Words related to death (*M* = 0.15%, *SD* = 0.43) were fairly infrequent, as were swear words (*M* = 0.07, *SD* = 0.19).

Secondary Research Question

What songs do music therapists deem most effective for lyric analysis in their work with the mental health population?

Survey respondents reported a total of 1,333 songs they deemed most effective for lyric analysis interventions with the mental health population. The researcher included 700 different songs in the song list resource after accounting for duplicates and necessary exclusions (See Appendix D).

CHAPTER FIVE

DISCUSSION

Primary Research Question

What are distinguishing characteristics of song lyrics most commonly used for lyric analysis with the mental health population as measured by Linguistic Inquiry and Word Count (LIWC) software?

The LIWC analysis of songs most commonly used by music therapists for lyric analysis with the mental health population revealed interesting linguistic trends along a variety of domains.

Word Count and Dictionary Words

Word count for each song was higher than 25, indicating appropriateness for LIWC2015 analysis (Pennebaker, Boyd, et al., 2015). Furthermore, 94% of all words in the song lyrics were captured by LIWC dictionaries, which is even higher than the 86% of all words that LIWC2015 claims to capture in general (Pennebaker, Boyd, et al., 2015).

Summary Language Variables

Song lyrics most commonly used for lyric analysis with mental health consumers scored low overall on analytical thinking, indicating that they were written in a more informal, personal, here-and-now, and narrative style as opposed to a more formal, logical, and hierarchical style (Pennebaker, Booth, et al., 2015). This makes sense, since song lyrics are typically written in a narrative style and are not considered to be formal writing. Although the artistic medium (song) may

largely explain the low score, it is important to note that songs do not automatically score low on analytical thinking. This is evident in the variability of mean scores. Music therapists may find that songs written more informally with a greater focus on the here-and-now resonate with mental health consumers and are generally more effective in achieving client/patient goals. The analytical thinking scale was developed based on an algorithm used in past research to measure categorical versus dynamic thinking in writing samples (Pennebaker et al., 2014). A more dynamic thinking style, which corresponds to a low score on the LIWC2015 analytical thinking domain, has been associated with suicidality in musicians (Markowitz & Hancock, 2016). Mental health consumers may connect with songs scoring low on analytical thinking because the writing style conveys a similar level of psychological distress as these consumers are currently experiencing. This may play into the perceived effectiveness of these songs for lyric analysis.

Song lyrics used for lyric analysis scored high on the authentic domain, indicating a more honest, personal, and disclosing writing style as opposed to a more guarded and distanced writing style (Pennebaker, Booth, et al., 2015). Lyric analysis is frequently used as a non-threatening way to engage mental health consumers in opening up about their own situations, struggles, fears, and hopes. Individuals are generally more receptive to personal disclosure when they feel a sense of trust and safety. It may put clients/patients more at ease and help with rapport building when songs with greater transparency and authenticity are chosen for lyric analysis.

Clout is a linguistic domain reflecting the confidence in a writing sample. A high score reflects expertise and confidence in the writing, while a low score reflects tentativeness, humility, and anxiety in the writing (Pennebaker, Booth, et al., 2015). Song lyrics scored in the middle overall, but the high variability suggests that this is due to varying levels of clout between songs. Music therapists may choose songs with varying levels of clout for different reasons. Songs with a high level of clout may be desirable for inspiring trust, hope, and change in mental health consumers, while songs with a low level of clout may be better for validating current consumer feelings and exploring anxiety or a lack of confidence in the consumer.

Song lyrics also scored in the middle on the emotional tone domain. High emotional tone reflects a positive, upbeat writing style, while a low number reflects an anxious, sad, or hostile writing style (Pennebaker, Booth, et al., 2015). As with clout, there was a high degree of variability in the mean scores. Some songs reflected a more positive emotional tone, while others reflected a more negative emotional tone. Music therapists may find that songs reflecting high positivity are more effective in certain contexts, while songs reflecting high negativity are more effective in others. This may vary depending on stage of treatment, therapist-consumer rapport, patient-preferred music, and treatment goals. In the early stages of treatment or at the beginning of a music therapy session, it may be most effective to meet consumers where they are emotionally for validation, rapport building, and initial exploration of therapeutic issues. If consumers are initially in a very negative headspace or generally prefer to listen to music that is more "moody," it could be counterproductive to initially use music with extremely positive and hopeful lyrics

or in a non-preferred genre or style. Using music with highly positive lyrics with a client who is experiencing negative emotions could actually be damaging to the therapeutic relationship, causing patients/clients to close off emotionally. When consumers are ready, song lyrics reflecting a positive emotional tone may be more appropriate and healing. The emotional tone scale was based on an algorithm developed in a past study to measure the level of overall emotional positivity in writing samples (Cohn et al., 2004). This previous study found that individuals highly preoccupied with a traumatic experience displayed lower levels of positivity immediately following the trauma but gradually returned to baseline rates of emotional positivity over the next two weeks. Mental health consumers experience greater difficulty with emotional positivity due to negative thought patterns, struggles with hopelessness, and poor coping skills (Clark & Beck, 2010). It typically takes longer for these consumers to change their outlook from predominantly negative to predominantly positive. These consumers likely connect more deeply with songs reflecting the negativity with which they are preoccupied, leading music therapists to choose some songs with negative emotional tone. Although they can inspire deep therapeutic discussion leading to new insights in certain contexts, negative song lyrics may also perpetuate negative rumination tendencies in mental health consumers. Lyrics with more emotional positivity may sometimes be more effective in helping consumers take a new perspective and break free from negative cycles.

Standard Linguistic Dimensions

The relatively high rate of first person singular pronouns in comparison with other personal pronouns indicates a high level of self-focused attention in song lyrics. The focus of the lyrics is on "me" as opposed to "him/her/them" or "you." This suggests that the most commonly used songs for lyric analysis with the mental health population are generally written in first person. Songs written in first person may be easier for mental health consumers to relate to and project their experiences upon due to the tendency of these individuals to be more self-preoccupied (Pyszcynski & Greenberg, 1987). High rates of first person singular pronoun use have been associated in past research with mental illness (Margola et al., 2010; Markowitz & Hancock, 2016; Rude et al., 2004; Stirman & Pennebaker, 2001), supporting the self-focus theory.

Second person pronouns were the second most prominent type of personal pronouns found in the analyzed song lyrics. They made up 5.15% of total word count, which is very high in comparison with the 0.68% found in expressive writing samples (Pennebaker, Boyd, et al., 2015), though it is important to note that only the means were reported for pronoun use in expressive writing samples, and not the standard deviations. In past research, higher rates of second person pronouns have been predictive of lower-quality relationships (Tausczik & Pennebaker, 2010). Songs referencing "you" and "your" most frequently may be more blaming and confrontational in nature. Mental health consumers may relate more closely with songs written in this style. While this may be the case, it is also important to consider that music therapists may pick songs with a high rate of second person

pronouns simply because they convey a clear message directly to the listener. The message could be positive (e.g., "you are beautiful") as opposed to confrontational or blaming.

Negations are words like "no," "never," and "not" that may influence the accuracy of other linguistic category percentages. For example, the phrase, "I am not sad" would be scored by LIWC as containing one negative emotion word and no positive emotion words even though the overall message of the phrase is positive. Close to 3% of all words in the most commonly used songs were negations. This is high compared to the 1.69% found in an expressive writing sample reported on by Pennebaker, Boyd, et al. in their calculation of base rates of word usage for LIWC2015 (2015). No standard deviation was reported for the expressive writing sample, however, so true comparison is limited.

Psychological Processes

Over 20% of all words in the song lyrics most commonly used by music therapists related to cognitive and social processes. The cognitive processes domain consists of the following sub-categories: insight, causation, discrepancy, tentativeness, certainty, and differentiation. The rate of cognitive process words in a writing sample offers a glimpse into how the writer is processing and interpreting information in order to mentally organize their environment (Tausczik & Pennebaker, 2010). Higher rates of cognitive process words have been associated with positive coping and recovery from trauma (Margola et al., 2010; Pennebaker et al., 2003). Music therapists may find that songs with more cognitive process words

encourage mental health consumers to challenge current thought patterns and develop greater insight into their own situations.

Isolation is a common struggle for mental health consumers, and songs with high rates of social process words may be desirable for increasing socialization or facilitating conversation about support systems. While social process words were prominent in the song lyrics, it is interesting to note that references to family and friends were very low. Sometimes family members and current friends can be unsafe people for individuals with mental illness, and encouraging a broader discussion about developing new support systems can be more healthy and productive than dwelling on current unhealthy relationships. This may play into the low family and friend references found in the most commonly used song lyrics. Also, it is important to consider how the rate of second person pronouns can influence the interpretation of the social processes domain. Many of the words calculated within the social processes domain may have been second person pronouns, which actually reflect poor-quality relationships.

Affective process words were less frequent than cognitive process words and social process words, though the mean rate (6.96%) was still higher than the mean rate for affective process words in expressive writing samples (M = 4.77%) (Pennebaker, Boyd, et al., 2015). Emotion regulation, expression, and exploration are so important for mental health consumers and feelings/emotions was the most frequently reported treatment theme/objective addressed by music therapists in the current survey, so it is somewhat surprising that the rate of affective process words was not higher. This may be at least partially explained by music as a unique

medium of emotional expression. Music has the ability to vividly relay and even induce emotion in its listeners, but this has to do with much more than song lyrics alone. Musical elements such as timbre, rhythm, tempo, melody, harmony, dynamics, and style greatly affect the overall mood of a song and must be carefully considered when selecting appropriate music for use with mental health consumers (Hanson-Abromeit, 2015). Additionally, with relation to song lyrics, literary devices and linguistic elements besides overt emotion references may be used to convey emotion. Within the affective processes domain, positive emotion words were used more frequently than negative emotion words, though there was high variability in both categories. Past writing studies have shown that high rates of positive emotion words and moderate rates of negative emotion words are predictors of physical health (Pennebaker, 1997). It seems that the expression of negative emotion is extremely important in processing difficulties up to a point, past which it can be unproductive and lead to poorer health.

Song lyrics most commonly used for lyric analysis with mental health consumers contained a high rate of perceptual process words (M = 5.69%) when compared with the mean rate of 2.38% found in expressive writing samples, though, again, this comparison must be made tentatively due to the lack of standard deviations reported for expressive writing samples (Pennebaker, Boyd, et al., 2015). Perceptual process words may help listeners to better connect with song lyrics by referencing what the songwriter or main character is seeing, hearing, and feeling in a given moment. Music therapists may choose songs with higher rates of perceptual process words when they want mental health consumers to identify closely with a

song or to imagine what it might be like to experience what is happening in a song. Conversely, music therapists may choose songs with lower rates of perceptual process words if the thematic content may be triggering for emotionally fragile consumers or if the song is intended to supply a point-of-view that the music therapist wants consumers to disassociate from.

Sexual words were very infrequent within the biological processes domain. Music therapists may find that songs with a high rate of sexual words are inappropriate or unnecessary in many therapeutic contexts. In a recent survey on the current state of censorship in adult psychiatric music therapy practice, music therapists reported censoring sexual themes and lyrics containing "sexual references" and "explicit sexuality" (Joplin & Dvorak, 2016).

Within the time orientations category, present focus words were much more common than future focus or past focus words. Songs with a greater focus on the present may be most commonly used for lyric analysis with mental health consumers due to the nature of treatment. Current mental healthcare delivery has shifted towards short-term acute inpatient stays, where therapy is delivered in a primarily single-session model (Eyre & Lee, 2015). The focus is generally on immediate needs and concerns; therefore, songs that focus on the present as opposed to the past or future may be most effective at meeting those needs. This is not to say that depending on the setting, specific consumer needs, and timeframe available for treatment, it might not be appropriate to use songs with more past or future references. It can be extremely valuable for mental health consumers to delve into past issues or events and to think about the future.

Songs most commonly used for lyric analysis with the mental health population contained very few death-themed words and swear words. Music therapists may be wary of using songs with high rates of death-themed words with a population that is so prone to suicidal ideation and suicide attempt. While songs that openly reference death may be appropriate and effective in certain contexts, music therapists appear to use song without these references much more frequently. The low rate of swear words reflects trends of censorship in current practice (Joplin & Dvorak, 2016).

Secondary Research Question

What songs do music therapists deem most effective for lyric analysis in their work with the mental health population?

Survey respondents reported 700 different songs that they deemed most effective for lyric analysis in their current work with mental health consumers. While there was some overlap in the songs music therapists reported, 73% of the songs were only listed by one music therapist. This shows that music therapists are incorporating a wide variety of songs into their practice with mental health consumers. It is also worth noting that several survey respondents reported using original songs for lyric analysis.

Limitations

The current study posed several limitations. Survey research relies on participant self-report, and there is no way to know whether participants provided accurate and unbiased responses. Additionally, the survey tool was emailed to a total of 6,757 music therapists; however, there is no way to know how many of

these potential participants work with mental health consumers and use lyric analysis. While the response rate was good in relation to the estimate of eligible participants, it was very low in relation to the total number of music therapists initially invited to participate.

The online nature of the survey posed problems for several music therapists who reported difficulties with the survey link. Also, the researcher received multiple automated email replies stating that the potential participant was out of the office for a period of time. This may have increased the chances of surveys getting lost in inboxes or spam folders.

Another limitation of the current study relates to the survey cover letter. The researcher realized during data analysis that an earlier version of the survey cover letter was accidentally sent out to participants. The earlier version of the cover letter stated that all music therapists who used lyric analysis were eligible to participate in the survey, regardless of the patient/client population with which they worked. The instructions listed on the actual survey instructed participants to discontinue the survey if they did not currently work with the mental health population. The contradiction between the cover letter and the survey may have caused confusion for respondents, resulting in a large number of music therapists continuing to fill out the survey after answering "no" to the initial question asking about current work using lyric analysis with the mental health population. The music therapist was able to exclude all music therapists who did not report currently using lyric analysis with the mental health population from data analysis, so the data was still valid for the current study. Still, this oversight likely caused

confusion for participants and may have even deterred potential respondents from participating.

This study was exploratory in nature, so results must be interpreted with caution. The study was designed to gain general information regarding linguistic trends in song lyrics most commonly used for lyric analysis with the mental health population in order to inform future research. There is a need to further validate LIWC as a tool for studying song lyric content, particularly as related to music therapy practice.

Suggestions for Future Research

The current research study was designed to collect preliminary information on linguistic characteristics of song lyrics most commonly used for lyric analysis with the mental health population. The exploratory outcomes can serve as a starting point for more focused research in the future. Future studies could compare song lyrics chosen by music therapists for lyric analysis in mental health practice with top Billboard hits from corresponding decades to see if there are any significant differences or if the distinguishing characteristics identified by the present study are consistent with popular music in general.

Additionally, future research might investigate the feasibility of using LIWC as a tool to help music therapists with appropriate song selection. While therapist judgment will always be crucial, there may be ways in which LIWC could assist in the song selection process. It would be interesting to look for correlations between specific linguistic domains and treatment themes and objectives reported for songs.

Future research should look into what songs mental health consumers perceive as being most effective. It is important to consider the consumer in treatment planning so that the therapist and consumer can work together to achieve the best possible outcomes. It would be interesting to see if the songs perceived as most effective by music therapists contain similar linguistic profiles to songs perceived as most effective by mental health consumers.

Implications for Current Practice

Because music is the therapeutic medium for change within music therapy, song selection is incredibly important. The therapeutic function of song lyrics should be carefully considered when choosing songs for lyric analysis with the mental health population. While results of the current study should be interpreted with caution and used as the basis for future research, they also offer implications for clinical practice in music therapy. First, the linguistic domains explored in the current study might be helpful for music therapists to consider when selecting appropriate songs for lyric analysis with mental health consumers. While most music therapists will not have access to the LIWC software, nor will this access necessarily be helpful at this stage in the research, therapists can look at song lyrics to get a general idea about linguistic elements like positive and negative emotion words, personal pronouns, past/present/future focus words, cognitive process words, and social process words.

Additionally, the song list resource may be used by music therapists to find songs that other therapists report as being effective with the mental health population. Individual therapist judgment is still incredibly important, but the song

list resource could be helpful for finding new songs relevant to mental health consumers.

As the number of music therapists working with the mental health population grows, it is crucial that music therapists have the necessary tools to provide the best possible treatment. Since lyric analysis is one of the most commonly used music therapy interventions with this population, more research on appropriate song selection is needed. The researcher hopes that the current study provides a better understanding of current song selection practices for lyric analysis with the mental health population.

Appendix A: IRB Exemption Certification

University of Kentucky

Office of Research Integrity
IRB, RDRC

EXEMPTION CERTIFICATION

MEMO: Ashley Miller,
Fine Arts - Music
[redacted]
Lexington, KY 40503
PI phone #[redacted]

FROM: Institutional Review Board
c/o Office of Research Integrity

SUBJECT: Exemption Certification for Protocol No. 16-1035-X4B

DATE: December 12, 2016

On December 12, 2016, it was determined that your project entitled, *Analyzing Songs Used for Lyric Analysis With Mental Health Consumers Using Linguistic Inquiry and Word Count (LIWC) Software*, meets federal criteria to qualify as an exempt study.

Because the study has been certified as exempt, you will not be required to complete continuation or final review reports. However, it is your responsibility to notify the IRB prior to making any changes to the study. Please note that changes made to an exempt protocol may disqualify it from exempt status and may require an expedited or full review.

The Office of Research Integrity will hold your exemption application for six years. Before the end of the sixth year, you will be notified that your file will be closed and the application destroyed. If your project is still ongoing, you will need to contact the Office of Research Integrity upon receipt of that letter and follow the instructions for completing a new exemption application. It is, therefore, important that you keep your address current with the Office of Research Integrity.

For information describing investigator responsibilities after obtaining IRB approval, download and read the document "PI Guidance to Responsibilities, Qualifications, Records and Documentation of Human Subjects Research" from the Office of Research Integrity's IRB Survival Handbook web page [http://www.research.uky.edu/ori/IRB-Survival-Handbook.html#PIresponsibilities]. Additional information regarding IRB review, federal regulations, and institutional policies may be found through ORI's web site [http://www.research.uke.edu/ori]. If you have questions, need additional information, or would like a paper copy of the above mentioned document, contact the Office of Research Integrity at (859) 257-9428.

Appendix B: Survey Cover Letter

Dear CBMT Member,

Study Overview

You are being invited to participate in a research study looking at the use of lyric analysis with mental health consumers across settings. Specifically, this study will examine the linguistic elements of song lyrics used for lyric analysis with consumers with mental health diagnoses. You were selected because you are a board-certified music therapist who opted to receive emails through the CBMT.

This study is a research project conducted by Ashley Miller, MT-BC, to fulfill her thesis requirements as part of the master's degree program at the University of Kentucky. Your participation in this survey will help advance the field of music therapy by providing a better understanding of song selection for lyric analysis with consumers with mental health diagnoses.

What will you be asked to do?

If you agree to participate, you will complete a brief survey about your work in any setting where you use lyric analysis with mental health consumers. You will be asked about your most effective songs for lyric analysis with mental health consumers. The survey will take about 5-10 minutes to complete. Your participation, completion, and submission of this survey will indicate your consent to take part in this research study.

Your answers are important in providing an accurate representation of songs most frequently used by music therapists for lyric analysis with consumers with mental health diagnoses. Of course, you have a choice about whether or not to complete the survey, but if you do decide to participate, you are free to skip any questions or discontinue at any time. You will not be paid for taking part in this study. There are no known risks to participating in this study.

Your responses to the survey are anonymous, which means no names will appear or be used on research documents, in presentations, or in publications. The research team will not know whether or not you participated in the study or that any information you provided came from you.

Please be aware, while we make every effort to safeguard your data once received on our servers via REDCap, given the nature of online surveys, as with anything involving the Internet, we can never guarantee the confidentiality of the data while still en route to us.

Contacts

If you have any questions about the study, please feel free to contact me using the information provided below. If you have complaints, suggestions, or questions about your rights as a research volunteer, contact the staff in the University of Kentucky Office of Research Integrity at 859-257-9428 or toll-free at 1-866-400-9428.

Thank you in advance for your assistance with this important project. To ensure your responses/opinions will be included, please submit your completed survey by _____.

Sincerely,

Ashley Miller, MT-BC
Department of Music Therapy
University of Kentucky
[redacted]
ashley92marie@uky.edu

Olivia Yinger, PhD, MT-BC
Thesis Advisor
University of Kentucky
(859) 218-0997
olivia.yinger@uky.edu

Appendix C: Survey

Confidential

Thesis Survey

Please complete the survey below.

Thank you!

For the purposes of this study, lyric analysis (also known as lyric discussion, music listening/discussion, guided music listening and counseling, song analysis, song lyric discussion, or song [lyric] discussion) is defined as a music therapy technique involving listening to a song and engaging in discussion centered on the lyric content for the purpose of assessing, validating, or addressing how the consumer understands, thinks, feels, or relates (Dvorak, 2016; Selvarajah, 2013).

The term "consumer" will be used synonymously with client, patient, or person receiving music therapy services (Silverman, 2009).

For this survey, consider your work using lyric analysis IN ANY SETTING.

1. Do you currently use lyric analysis with one or more consumers with a mental health diagnosis (excluding neurodevelopmental and neurocognitive disorders) in any setting? If yes, please continue the survey. If not, please discontinue this survey; thank you for your time.

- ◯ Yes
- ◯ No

DEMOGRAPHIC INFORMATION

2. Gender

- ◯ Male
- ◯ Female
- ◯ Transgender
- ◯ Other

Please indicate answer _____

3. Age

- ◯ < 20
- ◯ 20-29
- ◯ 30-39
- ◯ 40-49
- ◯ 50-59
- ◯ 60-69
- ◯ 70+

4. Ethnicity/Race

- ○ Black or African American
- ○ Asian/Asian American
- ○ Caucasian/White
- ○ Hispanic/Latino/Spanish
- ○ Multiracial
- ○ American Indian/Alaska Native
- ○ Pacific Islander
- ○ Other

Please indicate answer _____

MUSIC THERAPY BACKGROUND/CURRENT WORK

5. Highest Level of Education

- ○ Bachelor's degree
- ○ Master's degree
- ○ Doctoral degree

6. Theoretical Orientation (Check all that apply)

- ☐ Behavioral
- ☐ Cognitive
- ☐ Holistic
- ☐ Humanistic/Existential
- ☐ Neuroscience
- ☐ Psychodynamic
- ☐ Other

Please indicate answer _____

7. Affiliated Region

- ○ Great Lakes
- ○ Mid-Atlantic
- ○ Midwestern
- ○ New England
- ○ Southeastern
- ○ Southwestern
- ○ Western

8. Years of experience as a music therapy professional

- ○ < 1
- ○ 1-5
- ○ 6-10
- ○ 11-15
- ○ 16-20
- ○ 21-25
- ○ 26-30
- ○ 30+

9. Setting in which you currently work (Check all that apply)

- ☐ Children's Facility/School (Children's Day Care/Preschool, Early Intervention Program, School (K-12))
- ☐ Geriatric Facility (Adult Day Care, Assisted Living, Geriatric Facility - not nursing, Geriatric Psychiatric Unit, Nursing Home)
- ☐ Medical Setting (General Hospital, Oncology, Home Health Agency, Outpatient Clinic, Partial Hospitalization, Children's Hospital or Unit)
- ☐ Mental Health Setting (Child/Adolescent Treatment Center, Community Mental Health Center, Drug/Alcohol Program, Forensic Facility, Inpatient Psychiatric Unit)
- ☐ Self Employed & Private Practice
- ☐ Other

Please indicate answer _____

USE OF LYRIC ANALYSIS

10. Setting in which you currently use lyric analysis with one or more consumers with a mental health diagnosis (Check all that apply)

- ☐ Children's Facility/School (Children's Day Care/Preschool, Early Intervention Program, School (K-12))
- ☐ Geriatric Facility (Adult Day Care, Assisted Living, Geriatric Facility - not nursing, Geriatric Psychiatric Unit, Nursing Home)
- ☐ Medical Setting (General Hospital, Oncology, Home Health Agency, Outpatient Clinic, Partial Hospitalization, Children's Hospital or Unit)
- ☐ Mental Health Setting (Child/Adolescent Treatment Center, Community Mental Health Center, Drug/Alcohol Program, Forensic Facility, Inpatient Psychiatric Unit)
- ☐ Self Employed & Private Practice
- ☐ Other

Please indicate answer _____

11. Please list your 5 most effective songs for lyric analysis WITH MENTAL HEALTH CONSUMERS ONLY. After entering each song title, please enter the name of the artist and the primary treatment theme/objective addressed.

(a) Song 1 _____

Artist 1 _____

What is the primary treatment theme/objective you typically address using this song? _____

(b) Song 2 _____

Artist 2 _____

What is the primary treatment theme/objective you typically address using this song? _____

(c) Song 3 _____

Artist 3 _____

What is the primary treatment theme/objective you typically address using this song? _____

(d) Song 4 _____

Artist 4 _____

What is the primary treatment theme/objective you typically address using this song? _____

(e) Song 5 _____

Artist 5 _____

What is the primary treatment theme/objective you typically address using this song? _____

Appendix D: Lyric Analysis and Mental Health Song List Resource

Song	*n*	Artist
Let It Be	31	The Beatles *(30)* / Paul McCartney *(1)*
Lean on Me	29	Bill Withers
Bridge Over Troubled Water	25	Simon and Garfunkel *(22)* / Paul Simon *(2)* / Art Garfunkel *(1)*
Man in the Mirror	20	Michael Jackson
Brave	16	Sara Bareilles
Drive	16	Incubus
Fight Song	16	Rachel Platten
Landslide	16	Fleetwood Mac *(13)* / Stevie Nicks *(3)*
What a Wonderful World	13	Louis Armstrong
I Can See Clearly Now	12	Johnny Nash *(10)* / Jimmy Cliff *(2)*
Perfect *(10)* / F**kin' Perfect *(2)*	12	P!nk
The Climb	12	Miley Cyrus
Beautiful	11	Christina Aguilera
Hurt	11	Johnny Cash *(6)* / Nine Inch Nails *(5)*
Unwell	10	Matchbox Twenty
I Won't Back Down	9	Tom Petty
Times Like These	9	Foo Fighters
True Colors	9	Cyndi Lauper *(6)* / Phil Collins *(3)*
You've Got a Friend	9	Carole King *(4)* / Carole King & James Taylor *(3)* / James Taylor *(2)*
3 Things	7	Jason Mraz
7 Years	7	Lukas Graham
Demons	7	Imagine Dragons
Desperado	7	Eagles
Don't Worry, Be Happy	7	Bobby McFerrin
Hand in My Pocket	7	Alanis Morissette
Starting Over	7	Macklemore & Ryan Lewis
Try	7	Colbie Caillat
Under the Bridge	7	Red Hot Chili Peppers
Be OK	6	Ingrid Michaelson
Count On Me	6	Bruno Mars
Don't Stop	6	Fleetwood Mac
Firework	6	Katy Perry
Human	6	Christina Perri
My Favorite Things	6	Julie Andrews
Say	6	John Mayer
Stand by Me	6	Ben E. King
Three Little Birds	6	Bob Marley & The Wailers
A Change Is Gonna Come	5	Sam Cooke

Song	*n*	Artist
Amazing Grace	5	hymn
Blackbird	5	The Beatles
Breathe (2 AM)	5	Anna Nalick
I Hope You Dance	5	Lee Ann Womack
Imagine	5	John Lennon
Lost Boy	5	Ruth B
Numb	5	Linkin Park
Rise Up	5	Andra Day
Shake It Out	5	Florence + the Machine
You Gotta Be	5	Des'ree
(Sittin' On) The Dock Of The Bay	4	Otis Redding
Amazing	4	Aerosmith
Change Your Mind	4	Sister Hazel
Creep	4	Radiohead
Fear	4	Blue October
Have You Ever Seen the Rain	4	Creedence Clearwater Revival
I Am a Rock	4	Simon and Garfunkel
It's Been Awhile	4	Staind
Keep Your Head Up	4	Andy Grammer
Live Like You Were Dying	4	Tim McGraw
Mirror	4	Lil Wayne, feat. Bruno Mars
Otherside	4	Macklemore & Ryan Lewis
Rise	4	Katy Perry
Take Me Home, Country Roads	4	John Denver
Unwritten	4	Natasha Bedingfield
Wake Me Up	4	Avicii
With a Little Help from My Friends	4	The Beatles
You Can't Always Get What You Want	4	The Rolling Stones
Angel	3	Sarah McLachlan
Behind Blue Eyes	3	The Who
Brand New Me	3	Alicia Keys
Breakaway	3	Kelly Clarkson
Dear Mama	3	2Pac
Don't Fence Me In	3	Roy Rogers
Fire and Rain	3	James Taylor
Fix You	3	Coldplay
Hall of Fame	3	The Script, feat. will.i.am
Hallelujah	3	Leonard Cohen
Hands	3	Jewel
Happy	3	Pharrell Williams
Help!	3	The Beatles

Song	*n*	Artist
Home	3	Phillip Phillips
Home On the Range	3	traditional
Hotel California	3	Eagles
I Believe I Can Fly	3	R. Kelly
I Can	3	Nas
I Got a Name	3	Jim Croce
I Will Survive	3	Gloria Gaynor
Mean	3	Taylor Swift
Moonshadow	3	Cat Stevens
Not Afraid	3	Eminem
Old Man	3	Neil Young
Roar	3	Katy Perry
Sentimental Journey	3	Doris Day
Shake It Off	3	Taylor Swift
Skyscraper	3	Demi Lovato
Strength, Courage, and Wisdom	3	India.Arie
Superheroes	3	The Script
Swim	3	Jack's Mannequin
The River	3	Garth Brooks
The World's Greatest	3	R. Kelly
Titanium	3	David Guetta, feat. Sia
Up on the Roof	3	The Drifters *(2)* / Carole King *(1)*
What's Going On	3	Marvin Gaye
Whatever Will Be, Will Be (Que Sera, Sera)	3	Doris Day
Who You Are	3	Jessie J
At This Point In My Life	2	Tracy Chapman
Bad Day	2	Daniel Powter
Be Here Now	2	Ray LaMontagne
Beautiful	2	Eminem
Before He Cheats	2	Carrie Underwood
Bein' Green	2	The Muppets
Blowin' in the Wind	2	Bob Dylan
Blue Skies	2	Willie Nelson
Both Sides, Now	2	Joni Mitchell
Boulevard Of Broken Dreams	2	Green Day
Car Radio	2	twenty one pilots
Carry On	2	fun.
Change	2	Tracy Chapman
Changes	2	David Bowie
Comfortably Numb	2	Pink Floyd
Concrete Angel	2	Martina McBride

Song	*n*	Artist
Confident	2	Demi Lovato
Dark Side	2	Kelly Clarkson
Dear Younger Me	2	MercyMe
Don't Be So Hard On Yourself	2	Jess Glynne
Don't Let Me Be Misunderstood	2	Nina Simone
Don't Stop Believin'	2	Journey
Drift Away	2	Dobie Gray *(1)* / Uncle Kracker *(1)*
Dust in the Wind	2	Kansas
Everybody	2	Ingrid Michaelson
Everybody Hurts	2	R.E.M.
Eye of the Tiger	2	Survivor
Family Portrait	2	P!nk
Float On	2	Modest Mouse
Gold In Them Hills	2	Ron Sexsmith
Good Riddance (Time of Your Life)	2	Green Day
Hello	2	Adele
Here Comes the Sun	2	The Beatles *(1)* / Yo-Yo Ma, feat. James Taylor *(1)*
Home Is Where the Hatred Is	2	Gil Scott-Heron
I Am Light	2	India.Arie
I Lived	2	OneRepublic
I Shot The Sheriff	2	Bob Marley & The Wailers *(1)* / Eric Clapton *(1)*
I Tried	2	Bone Thugs-n-Harmony, feat. Akon
If I Were Brave	2	Jana Stanfield
If You're Going Through Hell (Before The Devil Even Knows)	2	Rodney Atkins
In My Life	2	The Beatles
Just the Way You Are	2	Billy Joel
King of Anything	2	Sara Bareilles
Learning to Fly	2	Tom Petty and the Heartbreakers
Leaving on a Jet Plane	2	John Denver
Lithium	2	Nirvana
Living In The Moment	2	Jason Mraz
Lose Yourself	2	Eminem
Love the Way You Lie	2	Eminem, feat. Rihanna
My City Need Something	2	PnB Rock
My Next Thirty Years	2	Tim McGraw
My Way	2	Frank Sinatra
No More Drama	2	Mary J. Blige
One Day	2	Matisyahu
Over the Rainbow	2	Judy Garland

Song	*n*	Artist
Peaceful Easy Feeling	2	Eatles
Perfect	2	Simple Plan
Puff, the Magic Dragon	2	Peter, Paul & Mary
Radioactive	2	Imagine Dragons
Ride	2	twenty one pilots
Ripple	2	Grateful Dead
Scars to Your Beautiful	2	Alessia Cara
Secrets	2	Mary Lambert
Shine On	2	Daisy May Erlewine
Simple Man	2	Lynyrd Skynyrd
Smile	2	Nat King Cole
Stressed Out	2	twenty one pilots
The Ballad of Love and Hate	2	The Avett Brothers
The Cave	2	Mumford & Sons
The Circle Game	2	Joni Mitchell
The Heart of the Matter	2	Don Henley
The House That Built Me	2	Miranda Lambert
The Rose	2	Bette Midler
The Tracks of My Tears	2	Smokey Robinson
This Little Light of Mine	2	traditional
Through the Rain	2	Mariah Carey
Tomorrow Will Be Kinder	2	The Secret Sisters
Umbrella	2	Rihanna, feat. Jay Z
Unsteady	2	X Ambassadors
We Are The Champions	2	Queen
We Can Work It Out	2	The Beatles
What I Am	2	will.i.am
With Your Face To The Wind (Harriet's Song)	2	Peter, Paul & Mary
You Are My Sunshine	2	The Pine Ridge Boys
(A Rhyme) This Time	1	Al Jarreau
(I Can't Get No) Satisfaction	1	The Rolling Stones
100 Years	1	Five For Fighting
A Beautiful Day	1	India.Arie
A Better Son/Daughter	1	Rilo Kiley
A Broken Wing	1	Martina McBride
A Change in Me	1	Susan Egan
A Living Prayer	1	Alison Krauss & Union Station
A New Life	1	Jim James
A Place in the Sun	1	Stevie Wonder
Above The Bones	1	Mishka
AC-Cent-Tchu-Ate the Positive	1	Johnny Mercer & The Pied Pipers

Song	*n*	Artist
Across the Universe	1	The Beatles
Adam's Song	1	blink-182
Ain't No Sunshine	1	Bill Withers
All Around Me	1	Flyleaf
All At Once	1	Jack Johnson
All Things Must Pass	1	George Harrison
All This Joy	1	John Denver
And So It Goes	1	Billy Joel
Angel From Montgomery	1	John Prine
Angels	1	Chance the Rapper, feat. Saba
Angry	1	Matchbox Twenty
Another Day to Run	1	Bill Withers
Another Rainbow	1	Baba B.
Apologize	1	OneRepublic
Auld Lang Syne	1	traditional
Autumn Leaves	1	Ed Sheeran
Awake My Soul	1	Mumford & Sons
Bag Lady	1	Erykah Badu
Basket Case	1	Green Day
Battle Scars	1	Lupe Fiasco & Guy Sebastian
Be Here Now	1	Mason Jennings
Be So Happy	1	Heartless Bastards
Beautiful Day	1	U2
Beautiful Emilie	1	Keziah Jones
Beautiful Flower	1	India.Arie
Beautiful Pain	1	Eminem, feat. Sia
Because of You	1	Kelly Clarkson
Bent	1	Matchbox Twenty
Best Day of My Life	1	American Authors
Better Days	1	Goo Goo Dolls
Between You and Me	1	dc Talk
Bless the Broken Road	1	Rascal Flatts
Blessings	1	Laura Story
Blood Brothers	1	Luke Bryan
Blowin' Smoke	1	Kacey Musgraves
Born This Way	1	Lady Gaga
Box of Rain	1	Grateful Dead
Boy On A String	1	Jars of Clay
Brand New Name	1	Sarah Jahn
Break Down The Walls	1	Asking Alexandria
Break The Shell	1	India.Arie
Breaking the Habit	1	Linkin Park

Song	*n*	Artist
Breathe	1	Alexi Murdoch
Breathe In, Breathe Out, Move On	1	Jimmy Buffett
Breathe Me	1	Sia
Bring Me to Life	1	Evanescence
Bring On The Rain	1	Jo Dee Messina
Broccoli	1	D.R.A.M., feat. Lil Yachty
Broken	1	Lindsey Haun
Bump In The Road	1	Jonny Lang
Burning Gold	1	Christina Perri
Butterfly Fly Away	1	Miley Cyrus
Call and Answer	1	Barenaked Ladies
Can't Fight This Feeling	1	REO Speedwagon
Carolina in My Mind	1	James Taylor
Carry Me	1	Papa Roach
Carry On Wayward Son	1	Kansas
Cat's in the Cradle	1	Harry Chapin
Change	1	Blind Melon
Change	1	Jack Johnson
Change Is Gonna Come	1	Norah Jones
Chiquitita	1	ABBA
Choices (Yup)	1	E-40
Clarity	1	John Mayer
Coat Of Many Colors	1	Dolly Parton
Code of Silence	1	Billy Joel, feat. Cyndi Lauper
Colors	1	Kira Willey
Colors of the Wind	1	Judy Kuhn
Come Sail Away	1	Styx
Coming Home	1	Diddy-Dirty Money, feat. Skylar Grey
Cough Syrup	1	Young the Giant
Crayola Doesn't Make A Color For Your Eyes	1	Kristin Andreassen
Crazy	1	Patsy Cline
Dancing in the Dark	1	Bruce Springsteen
Dandelion	1	Kacey Musgraves
Day 'n' Nite (Nightmare)	1	Kid Cudi
Days of Elijah	1	Robin Mark
Dear PTSD	1	Soldier Hard
Dear X, You Don't Own Me	1	Disciple
Defying Gravity	1	Idina Menzel, feat. Kristin Chenoweth
Do It Now	1	Ingrid Michaelson
Do-Re-Mi	1	Julie Andrews
Don Juan's Reckless Daughter	1	Joni Mitchell

Song	*n*	Artist
Don't Ever Let Nobody Drag Your Spirit Down	1	Eric Bibb
Don't Laugh At Me	1	Mark Wills
Don't Look Back	1	Boston
Don't Think Twice, It's All Right	1	Bob Dylan
Down in a Hole	1	Alice in Chains
Drug Ballad	1	Eminem
Drug Dealer	1	Macklemore
Dust My Broom	1	B.B. King
Easy	1	Commodores
El Condor Pasa (If I Could)	1	Simon and Garfunkel
Elastic Heart	1	Sia
Enough Is Enough	1	Eli Young Band
Everybody Wants to Rule the World	1	Tears for Fears
Excess Baggage	1	Staind
Faithfully	1	Journey
Fall Back Down	1	Rancid
Fall Into Me	1	Sugarland
Fallin'	1	Alicia Keys
Falling Slowly	1	Glen Hansard, feat. Marketa Irglova
Family	1	Dolly Parton
Far Away	1	Tyga, feat. Chris Richardson
Fast Car	1	Tracy Chapman
Father And Son	1	Cat Stevens
Feels Like Home	1	Chantal Kreviazuk
Fly	1	Nicki Minaj
Fly On The Wall	1	Thousand Foot Krutch
For You	1	Staind
Força	1	Nelly Furtado
Forget And Not Slow Down	1	Relient K
Fork in the Road	1	Marya Stark
Fountain of Sorrow	1	Jackson Browne
Fragile	1	Sting
Free	1	Zac Brown Band
Freewill	1	Rush
Friction	1	Imagine Dragons
Friends	1	Bette Midler
Friends in Low Places	1	Garth Brooks
From This Valley	1	The Civil Wars
Get Back Up Again	1	Anna Kendrick
Get Out The Map	1	Indigo Girls
Get Over It	1	Eagles

Song	*n*	Artist
Getting Better	1	The Beatles
Ghost	1	Ella Henderson
Gimme Three Steps	1	Lynyrd Skynyrd
Girl On Fire	1	Alicia Keys
Go Rest High On That Mountain	1	Vince Gill
God Will	1	Lyle Lovett
Gold	1	Britt Nicole
Good Day	1	Nappy Roots
Goodbye My Friend	1	Linda Ronstadt
Got to Begin Again	1	Billy Joel
Graduation (Friends Forever)	1	Vitamin C
Habits (Stay High)	1	Tove Lo
Handlebars	1	Flobots
Happiness	1	The Fray
Hard Times	1	Jamie Owens Collins
Hard Times Come Again No More	1	traditional
Hard to Say I'm Sorry	1	Chicago
Harry Hippie	1	Bobby Womack
Hate Me	1	Blue October
Head Full Of Doubt / Road Full Of Promise	1	The Avett Brothers
Headed in the Right Direction	1	India.Arie
Headlights	1	Eminem
Heart of Gold	1	Neil Young
Help Is Round The Corner	1	Coldplay
Here	1	Alessia Cara
Hero	1	Mariah Carey
Heroes (We Could Be)	1	Alesso
Hey Joe	1	The Jimi Hendrix Experience
Hey Jude	1	The Beatles
Hidden Ones	1	Missy Higgins
Hit Me With Your Best Shot	1	Pat Benatar
Hold My Hand	1	Hootie & the Blowfish
Hold On	1	Alabama Shakes
Hold On	1	Wilson Phillips
Hold Your Head High	1	Heartless Bastards
Hold Your Head Up	1	Macklemore
Home	1	Meg Hutchinson
Hopeless Boy	1	King Lil G, feat. David Ortiz
How Could You Leave Us	1	NF
How Far I'll Go	1	Auli'I Cravalho
How to Save a Life	1	The Fray

Song	*n*	Artist
Humble and Kind	1	Tim McGraw
I	1	Kendrick Lamar
I Am Not My Hair	1	India.Arie
I Am Somebody	1	Santana, feat. will.i.am
I Am What I Am	1	Roy Sakuma
I Am Woman	1	Helen Reddy
I Am… I Said	1	Neil Diamond
I Believe	1	Christina Perri
I Choose	1	India.Arie
I Didn't Know My Own Strength	1	Whitney Houston
I Don't Want to Be	1	Gavin DeGraw
I Drive Your Truck	1	Lee Brice
I Have Made Mistakes	1	The Oh Hellos
I Know Girls (Body Love)	1	Mary Lambert
I Love Me	1	Meghan Trainor
I Shall Be Released	1	Bob Dylan
I Walk the Line	1	Johnny Cash
I Wanna Get Better	1	Bleachers
I Want to Know What Love Is	1	Foreigner
I Want You Back	1	The Jackson 5
I Will Get There	1	Boyz II Men
I'll Be There	1	The Jackson 5
I'm Alive	1	Kenny Chesney, feat. Dave Matthews
I'm Coming Out	1	Diana Ross
I'm Movin' On	1	Rascal Flatts
I'm Not Lost, I Am Exploring	1	Jana Stanfield
I'm Not Okay (I Promise)	1	My Chemical Romance
I'm Not Who I Was	1	Brandon Heath
I'm O.K.	1	Styx
I'm On My Way	1	Kellie Pickler
I'm Sensitive	1	Jewel
I'm So Glad I'm Standing Here Today	1	Michel'le
I'm So Tired	1	The Beatles
If I Had A Hammer	1	Pete Seeger
If Today Was Your Last Day	1	Nickelback
If You Want to Sing Out, Sing Out	1	Cat Stevens
Ill With Want	1	The Avett Brothers
In Christ Alone	1	Keith & Kristyn Getty
In Repair	1	John Mayer
In the End	1	Linkin Park
Inner Demons	1	Julia Brennan
Inner Ninja	1	Classified, feat. David Myles

Song	*n*	Artist
Innocent	1	Taylor Swift
Isolation	1	Alter Bridge
It Happens	1	Sugarland
It Will Be a Good Day (The River)	1	Yes
It Will Rain	1	Bruno Mars
It's A Great Day To Be Alive	1	Travis Tritt
It's The Most Wonderful Time Of The Year	1	Andy Williams
Janie's Got a Gun	1	Aerosmith
Jekyll and Hyde	1	Five Finger Death Punch
Jesus, Take the Wheel	1	Carrie Underwood
Just	1	Radiohead
Just Give Me a Reason	1	P!nk
Keep Breathing	1	Ingrid Michaelson
Keep Holding On	1	Avril Lavigne
Keep Me In Your Heart	1	Warren Zevon
Keep Ya Head Up	1	2Pac, feat. Dave Hollister
Keep Your Eyes On The Prize	1	Pete Seeger
Keep Your Eyes Open	1	NEEDTOBREATHE
Kill Em with Kindness	1	Selena Gomez
Killem With Kindness	1	Dizzy Wright
King Heroin	1	James Brown
Kokomo	1	The Beach Boys
Last Hope	1	Paramore
Lay 'Em Down	1	NEEDTOBREATHE
Leaning on the Everlasting Arms	1	hymn
Lemonade	1	Alex Boyé
Lessons Learned	1	Carrie Underwood
Let Her Go	1	Passenger
Let It Carry You	1	José González
Let It Go	1	Idina Menzel
Let It Rain	1	Amanda Marshall
Let Your Light Shine	1	Keb' Mo'
Let's Call The Whole Thing Off	1	Fred Astaire and Ginger Rogers
Lifetime	1	Maxwell
Lights On	1	Makeshift Innocence
Listen	1	Beyoncé
Little Brown Jug	1	Arthur Godfrey
Little Do You Know	1	Alex & Sierra
Live Like A Warrior	1	Matisyahu
Live Like We're Dying	1	Kris Allen
Locked Up	1	Akon

Song	*n*	Artist
Lone Ranger	1	Rachel Platten
Loser	1	3 Doors Down
Lost!	1	Coldplay
Love Can Build a Bridge	1	The Judds
Love Me Tender	1	Elvis Presley
Love Yourself	1	Justin Bieber
Love Yourz	1	J. Cole
Lovely	1	Sara Haze
Lovely Day	1	Bill Withers
Mad World	1	Gary Jules
Make It Happen	1	Mariah Carey
Mansion	1	NF
Marchin On	1	OneRepublic
Margaritaville	1	Jimmy Buffett
Marilyn Monroe	1	Nicki Minaj
Master of Puppets	1	Metallica
Matter Of Trust	1	Billy Joel
Maybe	1	Sick Puppies
Me	1	Paula Cole
Me, Myself & I	1	G-Eazy, feat. Bebe Rexha
Message in a Bottle	1	The Police
Migraine	1	twenty one pilots
Miniature Disasters	1	KT Tunstall
M Shebeirach	1	Debbie Friedman
Momma I'm Sorry	1	Lil Herb
Monster	1	Imagine Dragons
Monster	1	Skillet
Moon River	1	Frank Sinatra
Morning Has Broken	1	Cat Stevens
Mrs. Robinson	1	Simon and Garfunkel
My Blue Heaven	1	Gene Austin
My Girl	1	The Temptations
My Iron Lung	1	Radiohead
My Life	1	Mary J. Blige
My Mom	1	Chocolate Genius
My Name is Death	1	Red Wanting Blue
My Shot	1	Lin-Manuel Miranda
My Silver Lining	1	First Aid Kit
My Story	1	Sean McGee
My Wish	1	Rascal Flatts
Nether Lands	1	Dan Fogelberg
Never Too Late	1	Three Days Grace

Song	*n*	Artist
New York Minute	1	Eagles
New York State of Mind	1	Billy Joel
No Fear	1	Terri Clark
Noah's Titanic	1	Antje Duvekot
Nobody Ever Told You	1	Carrie Underwood
Not An Addict	1	K's Choice
Nothing Compares 2 U	1	Prince
Nowhere Man	1	The Beatles
Oasis	1	Grace Potter and the Nocturnals
Ob-La-Di, Ob-La-Da	1	The Beatles
Oh Happy Day	1	The Edwin Hawkins Singers
Oh, Pretty Woman	1	Roy Orbison
Old Pine	1	Ben Howard
Olivia	1	One Direction
On the Road Again	1	Willie Nelson
One Call Away	1	Charlie Puth
One Little Slip	1	Barenaked Ladies
One Step At A Time	1	Jordin Sparks
One Step Closer	1	Linkin Park
One Tribe	1	Black Eyed Peas
Operation Spirit (The Tyranny Of Tradition)	1	Live
Outside Myself	1	k.d. lang
Overstand	1	Dead Prez
Pack Up Your Sorrows	1	Judy Collins
Paradise	1	Coldplay
Part of Me	1	Katy Perry
Passenger Song	1	Great Lake Swimmers
Patterns	1	Paul Simon
Peace	1	Norah Jones
Peace Like a River	1	traditional
Phoenix	1	Antje Duvekot
Piano Man	1	Billy Joel
Pieces	1	Stephen Cochran
Pioneer	1	The Band Perry
Please Don't Leave Me	1	P!nk
Polaroid	1	Imagine Dragons
Pompeii	1	Bastille
Poprocks & Coke	1	Green Day
Pray For Forgiveness	1	Alicia Keys
Precious Lord, Take My Hand	1	hymn
Precious Memories	1	hymn

Song	*n*	Artist
Pressure Cracks	1	Grieves
Pursuit of Happiness (Nightmare)	1	Kid Cudi
Q.U.E.E.N.	1	Janelle Monáe, feat. Erykah Badu
Quiet Storm	1	Smokey Robinson
Rainbow Connection	1	Jim Henson
Raindrops Keep Fallin' on My Head	1	B.J. Thomas
Read All About It	1	Professor Green, feat. Emeli Sandé
Reality and Fantasy	1	Raphael Gualazzi
Recover	1	Natasha Bedingfield
Rie y Llora	1	Celia Cruz
Riptide	1	Vance Joy
Rise	1	Eddie Vedder
Road Signs	1	Bill Danoff
Rockstar	1	Nickelback
Roll Away Your Stone	1	Mumford & Sons
Rolling in the Deep	1	Adele
Rooster	1	Alice in Chains
Rule	1	Nas
Runaway Train	1	Soul Asylum
Say Something	1	A Great Big World
Second Chance	1	Shinedown
Secret O' Life	1	James Taylor
Shine On You Crazy Diamond	1	Pink Floyd
Should I Stay or Should I Go	1	The Clash
Sideways	1	Citizen Cope
Silence	1	Jarren Benton
Simple Gifts	1	traditional
Sing About It	1	The Wood Brothers
Skinny Love	1	Birdy
Smile	1	Eyedea & Abilities
So Unsexy	1	Alanis Morissette
Some Days Are Diamonds (Some Days Are Stone)	1	John Denver
Some Nights	1	fun.
Somebody That I Used to Know	1	Gotye, feat. Kimbra
Someday	1	Rob Thomas
Someone Like You	1	Adele
Sometimes I Feel Like a Motherless Child	1	Paul Robeson
Somewhere	1	Audra McDonald
Somewhere Only We Know	1	Keane
Soul to Squeeze	1	Red Hot Chili Peppers

Song	*n*	Artist
Spirits	1	The Strumbellas
Stand By You	1	Rachel Platten
Stand In The Light	1	Jordan Smith
Step by Step	1	Whitney Houston
Step Into the Projects	1	Meshell Ndegeocello
Stop and Stare	1	OneRepublic
Sunrise, Sunset	1	Chaim Topol, feat. Norma Crane
Sunshine	1	Jonathan Edwards
Sunshine On My Shoulders	1	John Denver
Supply and Demand	1	Amos Lee
Survivor	1	Destiny's Child
Take It Easy	1	Eagles
Take the Money and Run	1	Steve Miller Band
Take Us Back	1	Mavis Staples
Takes a Little Time	1	Amy Grant
Talk	1	Coldplay
Teach Your Children	1	Crosby, Stills, Nash & Young
Tell Your Heart to Beat Again	1	Danny Gokey
That I Would Be Good	1	Alanis Morissette
That Smell	1	Lynyrd Skynyrd
That Wasn't Me	1	Brandi Carlisle
That's Life	1	Frank Sinatra
The 23rd Psalm	1	Bobby McFerrin
The 59th Street Bridge Song	1	Simon and Garfunkel
The Art of Peer Pressure	1	Kendrick Lamar
The Beast In Me	1	Johnny Cash
The Fear	1	Ben Howard
The Fighter	1	Gym Class Heroes
The Gambler	1	Kenny Rogers
The Great Escape	1	P!nk
The Greatest Love of All	1	George Benson
The Instrumental	1	Lupe Fiasco, feat. Jonah Matranga
The Mercy Wheel	1	A.A. Bondy
The Minnow & The Trout	1	A Fine Frenzy
The Needle and the Damage Done	1	Neil Young
The Outside	1	Taylor Swift
The Real Me	1	Natalie Grant
The Science of Selling Yourself Short	1	Less Than Jake
The Sound of Silence	1	Simon and Garfunkel
The Storm Is Over Now	1	R. Kelly
The Story	1	Brandi Carlisle

Song	*n*	Artist
The Stranger	1	Billy Joel
The Way I Am	1	Ingrid Michaelson
The Wind	1	Cat Stevens
The Wrestler	1	Bruce Springsteen
Therapy	1	All Time Low
There's Hope	1	India.Arie
This Is Gospel	1	Panic! at the Disco
This Is Your Life	1	Switchfoot
This Land Is Your Land	1	Woody Guthrie
This Year (Happy New Year)	1	JJ Heller
Thrive	1	Switchfoot
Thugz Mansion	1	2Pac, feat. Nas and J. Phoenix
Tightrope	1	Stevie Ray Vaughan
Time	1	Pink Floyd
Time in a Bottle	1	Jim Croce
Time to Move On	1	Tom Petty
Timshel	1	Mumford & Sons
Tin Man	1	The Avett Brothers
To the Morning	1	Dan Fogelberg
Today My Life Begins	1	Bruno Mars
Tomorrow	1	Aileen Quinn
Too Many Years	1	Kodak Black, feat. PnB Rock
Traumatized	1	Meek Mill
T'filat HaDerech	1	Debbie Friedman
Treat Me Like Somebody	1	Tink
Trouble In Mind Blues	1	Thelma La Vizzo
Turn The Page	1	Bob Seger
Turn to Stone	1	Ingrid Michaelson
Turn, Turn, Turn	1	Pete Seeger
Twinkle, Twinkle, Little Star	1	traditional
Under Pressure	1	Queen, feat. David Bowie
Under the Boardwalk	1	The Drifters
Under The Weather	1	KT Tunstall
Unpretty	1	TLC
Unsent	1	Alanis Morissette
Up To The Mountain (MLK Song)	1	Patty Griffin
Up!	1	Shania Twain
Use Somebody	1	Kings of Leon
Use To Be	1	Meek Mill
Vegas	1	Sara Bareilles
Video	1	India.Arie
Vienna	1	Billy Joel

Song	*n*	Artist
Virginia Woolf	1	Indigo Girls
Wait Til You See My Smile	1	Alicia Keys
Waiting For My Chance To Come	1	Noah and the Whale
Waiting For My Real Life To Begin	1	Colin Hay
Walk	1	Foo Fighters
Walk On	1	U2
Wall Of Denial	1	Stevie Ray Vaughan
Warrior	1	Demi Lovato
Wasted Years	1	Iron Maiden
Watching The Wheels	1	John Lennon
Water From Another Time	1	John McCutcheon
Waterfalls	1	TLC
We Didn't Start the Fire	1	Billy Joel
We Shall Overcome	1	traditional
Weight in Gold	1	Gallant
Welcome Home, Son	1	Radical Face
Welcome To My Life	1	Simple Plan
What I Cannot Change	1	LeAnn Rimes
What I've Done	1	Linkin Park
What Light	1	Wilco
What's Up?	1	4 Non Blondes
When I Drink	1	The Avett Brothers
Where Are You Going	1	Dave Matthews Band
Where Have All the Flowers Gone	1	Peter, Paul & Mary
Where is the Love?	1	The Black Eyed Peas
Whiskey Lullaby	1	Brad Paisley and Alison Krauss
Whispers	1	Ayla Nereo
White Christmas	1	Bing Crosby
Who I Am	1	Jessica Andrews
Who I Am	1	Jonas Brothers
Who Says	1	Selena Gomez & The Scene
Wind Beneath My Wings	1	Bette Midler
Wish	1	Lecrae
Wishlist	1	Pearl Jam
With Arms Wide Open	1	Creed
With My Own Two Hands	1	Jack Johnson
Wonderwall	1	Oasis
World Spins Madly On	1	The Weepies
Yesterday	1	The Beatles
You Are More	1	Tenth Avenue North
You May Be Right	1	Billy Joel
You Raise Me Up	1	Josh Groban

Song	*n*	Artist
You've Got a Friend in Me	1	Randy Newman
You've Really Got a Hold on Me	1	Smokey Robinson & The Miracles
Your Life Is Now	1	John Mellencamp
Zombie	1	Fela Kuti

Appendix E: Complete List of Primary Treatment Themes/Objectives

Treatment Theme/Objective	*n*
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Choices	21
Recovery	20
Self-awareness	18
Isolation/Loneliness	17
Self-expression	17
Faith/Spirituality	14
Control	13
Mindfulness	13
Moving forward	13
Love	12
Perseverance	10
Struggle	10
Trauma/Abuse	10
Trust	10
Communication	9
Life experiences	9
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Life review	8

Treatment Theme/Objective	*n*
Validation	8
Courage	7
Forgiveness	7
Relaxation	7
Self-advocacy	7
Self-destructive behavior	7
Values	7
Cognitive distortions	6
Insight	6
Meaning/Purpose	6
New beginnings	6
Perspective	6
Safety	6
Symptoms	6
Client preferred music	5
Competency restoration	5
Future orientation	5
Home	5
Stress	5
Attending to reality	4
Autonomy	4
Boundaries	4
Encouragement	4
Freedom	4
Group dynamics	4
Psychosocial	4
Abandonment	3
Bullying	3
Competency education	3
Empathy/Compassion	3
Existential concerns	3
Finding beauty	3
Growth	3
Healthy thought process	3
Pain	3
Peer pressure	3
Problem identification	3
Problem solving	3
Reframing	3
Trigger identification	3
Violence	3
Aging	2

Treatment Theme/Objective	*n*
Expectations	2
Leisure skills	2
Life influences	2
Making mistakes	2
Mood elevation	2
Perfectionism	2
Responsibility	2
Self-care	2
Wants vs. needs	2
Words of wisdom	2
Assessment	1
Authenticity	1
Authority	1
Balancing good and bad experiences	1
Beginning therapy	1
Blame	1
Burnout	1
Cautionary tale	1
Cheating	1
Childhood	1
Consequences of self-will	1
Cultural competence	1
Cycles	1
Defense mechanisms	1
Discharge planning	1
Duality	1
Ethical standards of behavior	1
Good vs. bad advice	1
Goodbye song	1
Holiday season	1
Idea of manhood	1
Identifying derogatory and stigmatizing language	1
Identifying negative attachments	1
Imagining a better life/world	1
Individuation	1
Legacies	1
Living in a mental hospital	1
Medication	1
Military lifestyle	1
Narratives	1
Peace	1

Treatment Theme/Objective	*n*
Positive reinforcement	1
Process	1
Psychoeducation	1
Separation	1
Sexuality	1
Showing others our gifts	1
Simplicity	1
Taking the road less traveled	1
Therapeutic engagement	1
Wanderlust	1
What's going on in this song	1
When it is appropriate	1
Willing vs. Willfulness	1

Appendix F: Descriptive Statistics for LIWC2015 Outputs

LIWC Domains	**Mean**	***SD***
Word count	284.25	115.45
Summary Language Variables		
Analytical thinking	25.22	22.89
Clout	53.21	35.45
Authentic	73.34	31.95
Emotional tone	51.34	34.81
General Descriptors		
Words/sentence	198.71	136.86
Words>6 letters	7.78	3.76
Dictionary words	94.11	4.83
Linguistic Dimensions		
Total function words	58.58	6.32
Total pronouns	21.43	4.64
Personal pronouns	15.72	5.12
1st pers singular	8.98	5.48
1st per plural	0.77	1.44
2nd person	5.15	4.63
3rd pers singular	0.29	0.65
3rd pers plural	0.54	0.76
Impersonal pronouns	5.71	3.86
Articles	4.8	2.15
Prepositions	11.66	3.76
Auxiliary verbs	13.16	5.85
Common adverbs	6.2	2.90
Conjunctions	6	2.76
Negations	2.94	3.56
Other Grammar		
Common verbs	25.27	8.26
Common adjectives	3.94	3.16
Comparisons	1.86	2.05
Interrogatives	1.98	2.36
Numbers	1.09	1.76
Quantifiers	1.8	1.34
Psychological Processes		
Affective processes	6.96	5.34
Positive emotion	4.39	4.11
Negative emotion	2.54	2.59
Anxiety	0.9	2.23
Anger	0.33	0.64

LIWC Domains	Mean	*SD*
Sadness	0.69	0.93
Social processes	11.21	7.48
Family	0.27	0.51
Friends	0.4	0.82
Female references	0.23	0.56
Male references	0.49	1.24
Cognitive processes	11.84	5.62
Insight	2.66	2.08
Causation	1.51	1.76
Discrepancy	1.98	2.57
Tentative	2.43	2.80
Certainty	2.18	2.10
Differentiation	2.51	1.96
Perceptual processes	5.69	5.69
See	2.88	4.86
Hear	1.56	3.67
Feel	1.11	1.16
Biological processes	2.32	1.59
Body	0.95	1.12
Health	0.7	0.81
Sexual	0.03	0.12
Ingestion	0.36	0.69
Drives	7.18	5.27
Affiliation	1.89	2.11
Achievement	1.2	2.29
Power	2.19	2.18
Reward	1.71	2.33
Risk	0.62	1.23
Time orientations		
Past focus	2.83	3.19
Present focus	18.85	8.53
Future focus	3.53	3.24
Relativity	16.87	7.21
Motion	3.69	3.28
Space	7.78	5.17
Time	6.11	4.65
Personal concerns		
Work	0.38	0.80
Leisure	0.82	1.26
Home	0.23	0.49
Money	0.21	0.36
Religion	0.41	0.91

LIWC Domains	Mean	*SD*
Death	0.15	0.43
Informal language	1.97	2.34
Swear words	0.07	0.19
Netspeak	0	0.00
Assent	0.98	1.70
Nonfluencies	0.7	1.17
Fillers	0	0.00

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VITA

Ashley Miller, MT-BC, NICU-MT

EDUCATION

UNIVERSITY OF KENTUCKY – Lexington, KY *05/17*
Master of Music in Music Therapy *Expected*

UNIVERSITY OF LOUISVILLE – Louisville, KY *12/14*
Bachelor of Music in Music Therapy

PROFESSIONAL EXPERIENCE

imagine.magazine *07/16 – Present*
Editorial Assistant

University of Kentucky – Lexington, KY *08/15 – 05/16*
Music Therapy Graduate Teaching Assistant

Louisville Music Therapy, LLC – Louisville, KY *01/15 – 07/15*
Contract Music Therapist

Therapy Lex, LLC – Lexington, KY *04/15 – 05/15*
Contract Music Therapist

UK HealthCare – Lexington, KY *07/14 – 12/14*
Music Therapy Intern

SCHOLASTIC HONORS

University of Kentucky
Rita C. Lam Award recipient for exceptional achievement in music therapy 05/17

University of Louisville
Magna cum laude graduate 12/14
School of Music Dean's Award recipient 12/14
Joan McCombs Scholarship recipient for music therapy 08/12

PUBLICATIONS

Miller, A. (2014). Drum together: Improving joint attention. *imagine, 5*, 110.

Miller, A., Yinger, O. S., & Zwischenberger, J. (2016). Altering perceptions: Research, cost-effectiveness, and advocacy. *imagine, 7,* 53-57.