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# The impact of perceived psychosocial performance related symptoms of college musicians

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**THE IMPACT OF PERCEIVED PSYCHOSOCIAL PERFORMANCE RELATED  
SYMPTOMS ON COLLEGE MUSICIANS**

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**A Masters Thesis presented to the Faculty of the  
Graduate Program in Occupational Therapy  
Ithaca College**

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**In partial fulfillment of the requirements for the degree  
Master of Science**

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**by**

**Sophie E. Leeds**

**June 2014**

**Ithaca College**  
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**CERTIFICATE OF APPROVAL**

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**This is to certify that the Thesis of**

**Sophie E. Leeds**

**Submitted in partial fulfillment of the requirements for the degree of  
Master of Science in the Department of Occupational Therapy, School of Health Sciences  
and Human Performance at Ithaca College has been approved.**

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## Abstract

Researchers have extensively explored the lives of professional musicians, and the high prevalence of experienced physical injuries and psychological stressors. However, limited research has been published about the experiences of college musicians. The purpose of this survey design research study was to gain insight into the impact of the perceived psychosocial performance related symptoms (PPRS) experienced by college student musicians on their occupational engagement. An online, anonymous survey was administered to 570 college musicians at a small college in the Northeastern United States. The contents of the 21 survey questions and scales were designed with information gathered from a review of the available literature, the Occupational Therapy Practice Framework, and feedback from faculty experts and music alumni. The survey questions and scales investigated the impact of PPRS on college musicians, by examining the demographic makeup of this population, the prevalence of various PPRS, their impact on occupational engagement and well being, and the ways college musicians manage their symptoms. Results indicated that college musicians have a high prevalence of PPRS; most reported having at least 1 PPRS, and the average reported experiencing 7.11 PPRS. High stress, experienced by approximately 83% of the participants, was one of many factors that significantly contributed to amount of PPRS college musicians reported, their perceived abilities to manage their symptoms, and their level of difficulty with occupational engagement. In addition, 40% of participants noted that their PPRS had an impact on their ability to perform music. Occupational therapists could potentially address the negative impact of PPRS on engagement in meaningful occupations, through collaboration with music professors to provide education about coping strategies, symptom management, prevention, or time management strategies.

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All of the participants of this study

## *Dedication*

This research is dedicated to all the musicians and teachers, who have taught me how to listen, learn, interpret, and create my own style in music and in all aspects of life, and to my family and friends who have supported me throughout this journey.

## Table of Contents

Chapter 1. Introduction .....	1
Chapter 2. Review of the Literature.....	4
Chapter 3. Methods and Procedures .....	19
Chapter 4. Manuscript .....	24
References .....	42
Tables .....	52
Appendices .....	55
Appendix A: Survey .....	55
Appendix B: Human Subjects Proposal, Recruitment Materials, and Approval Letters...	64
Appendix C: Author Guidelines for Occupational Therapy in Health Care.....	73

## List of Tables

Table 1. Frequency of Symptoms.....	52
Table 2. Hierarchical Multiple Regression - Total PPRS.....	53
Table 3. Hierarchical Multiple Regression - Impact on Daily Life.....	55

## **Chapter 1: Introduction**

### **Background**

Musicians experience a significant amount of pressure in today's society (Barton & Feinberg, 2008). The repetitive nature of the task of practicing, the prolonged postures and positions musicians hold, and the social and professional demands placed on them, all contribute to potential performance related symptoms (Barton & Feinberg, 2008; Ginsborg, Kreutz, Thomas, & Williamson, 2009; Guptill, 2011). Additionally, musicians have been shown to encounter competition, isolation in every day working life, difficulty maintaining social relationships, authoritarian organization structures, failure to achieve career goals, and financial uncertainty (Hildebrandt, Nubling, & Candia, 2012). Many musicians experience a combination of these stressors, and if unresolved, they can result in job strain (Karasek, 1979). Karasek's (1979) demand-control model theory suggests that job strain originates when high job stress is partnered with feelings that one has low control over stressors. These factors can negatively impact the physical and psychosocial well-being of musicians (Hildebrandt, Nubling, & Candia, 2012; van Fenema et al., 2013).

Musicians typically begin to experience the performance related symptoms and occupational stressors that result in future job strain well before they enter the professional world; often, these symptoms begin in the early stages of their musical education (Zander, Voltmer, Spahn, & Mus, 2010). For example, it has been established that many musicians experience physical performance related injuries beginning in college, and these injuries may lead to decreased occupational performance (Guptill & Golem, 2008). It has also been suggested that college musicians experience performance related anxiety that causes self-doubt and worry (Miller & Chesky, 2004).

## **Problem Statement**

Despite the wealth of information published about musicians in general and as related to physical symptoms musicians' experience, there are several gaps within the literature related to the psychosocial issues faced by college student musicians, and the subsequent impact on occupational engagement.

## **Rationale**

Job strain amongst musicians is closely tied to the occurrence of performance related symptoms, and when unresolved, can be detrimental to their ability to pursue their roles as successful musicians and can impact their occupational performance (Zander et al., 2010). For example, job strain can decrease musicians' performance skills, their abilities to concentrate, and their overall psychological stability (Zander et al., 2010). In general, music tends to be associated with pleasure, relaxation, and entertainment; the population of professional musicians is not often thought to experience job strain. Professional musicians are commonly overlooked when interventions are designed to address the consequences of occupational stress (Hildebrandt, Nubling, & Candia, 2012). The occupation of playing music is closely tied to professional musicians' identities and sense of selves (Andersen, Roessler, & Eichberg, 2013). Musicians' careers may be at question if they experience job strain that results in difficulty performing music with ease and satisfaction, and/or it reaches a point when it affects other aspects of their lives, such as their physical health and interpersonal relationships (Guptill, 2012). To this end, it is important to understand the nature of these issues and address them as early as possible (Zander et al., 2010).

Occupational therapists have the training and skills to address the needs of this population, as their primary role is to help people continue to pursue the occupations that provide

meaning to their lives with the most independence and satisfaction as possible (AOTA, 2012). This research study will provide occupational therapists with insight into causes of musicians' psychosocial performance related symptoms (PPRS), and how PPRS can affect occupational performance among college musicians.

### **Purpose**

The purpose of this survey design research study is to gain insight into the impact of the perceived psychosocial performance related symptoms experienced by college student musicians on their occupational engagement.

### **Operational Definition**

Psychosocial performance related symptoms (PPRS), symptoms whose origins are related to, or are worsened by, the performing and practicing of musical instruments. Symptoms can include, but are not limited to the following: anger, anxiety, frustration, emotional exhaustion, stress, dissatisfaction, fear, decreased self-confidence, performance anxiety or stage fright, fatigue, and physiological symptoms that can be associated with psychosocial concerns.

## Chapter 2: A Review of the Literature

### Introduction

Research indicates that musicians are placed under a significant amount of pressure in today's society (Barton & Feinberg, 2008). The repetitive nature of the task of practicing and performing, the postures sustained over extended periods of time, the social demands, and the pressures musicians endure put this population at risk for having potential performance related symptoms (Barton et al., 2008; Ginsborg et al., 2009; Guptill, 2011). 'Performance related symptoms' is a comprehensive term that refers to symptoms whose origins are related to, or are worsened by, the performing and practicing of musical instruments. Past research has generally focused on two common types of performance related symptoms, musculoskeletal disorders and performance anxiety (Sandell, Frykman, Chesky, & Fjellman-Wikland, 2009). Overuse injury, repetitive strain injury, cumulative trauma disorder, and repetitive motion are other terms for playing-related musculoskeletal disorders, and they refer to the effects on soft tissues when they are exerted beyond anatomic and physiological limits (Sandell et al., 2009). Performance anxiety is considered to be a subtype of social anxiety, and has been defined as, "a marked and persistent fear of social or performance situations in which embarrassment may occur" (Kirschner, Bloom, & Skutnick-Henley, 2008, p. 59-60).

Extensive research has been conducted on the prevalence of physical performance related symptoms, and studies have shown that they often start in college for musicians (Barton & Feinberg, 2008). Guptill and Golem (2008) indicated that 90% of college-aged musicians will experience a physical performance related injury at some point in their careers and that they can result in career changes. Similarly, Ackermann, Kenny, and Fortune (2011) discussed the prevalence of such injuries specifically amongst college flautists, and found that of the 20

participants, all but one reported having a physical performance related injuries, and the majority of them had experienced at least 3 months of pain as a result. It has also been reported that the overuse injuries, chronic pain, and stage fright college musicians experience can result in psychosocial issues (Montello, 2010). Although most of the previous studies mention the presence of PPRS such as depression and anxiety, emotional stressors, or the high stress of the competitive environments musicians are placed in, limited research looks more specifically at PPRS and their impact on college musicians' daily lives and occupations (Ackermann et al., 2011; Guptill & Golem, 2008; Montello, 2010).

### **Occupational Stress and Musicians**

The presence of job stressors in varying professions and settings has been extensively researched (Liu, Liu, Mills, & Fan, 2013) and has been a topic of interest for a long time. Beehr and Newman (1978) described job stressors as sources of stress at work that are generally conceptualized as negative factors, as they are associated with employees' psychological strains, (e.g., negative emotions), physical strains (e.g., physical symptoms), and behavioral strains (e.g., poor performance). Common stressors in the workplace include, but are not limited to high workload, temporal pressures, difficulty of tasks, high responsibility, role ambiguity, interpersonal conflict, organizational issues, and concerns relating to job security (Liu et al., 2013). In moderation, job stressors can result in positive outcomes, including increased motivation to learn and accomplish tasks, and increased job satisfaction, however most employees perceive job stressors with negativity, since the negative outcomes usually outweigh the positive outcomes (Liu et al., 2013). Karasek's demand-control model theory suggests that job stressors originate when high job stress is partnered with feelings of low control over its stressors (Karasek, 1979). For example, the employees may lack autonomy over certain aspects

of their job, such as the task performance and the use of their skills (Karasek, 1979). Van Fenema and colleagues stated that job stressors, when unresolved, are detrimental to workers' physical and psychosocial wellness, and cause occupational stress (van Fenema et al., 2013).

Professional musicians and music students often experience occupational stress. One study conducted in Europe shows that jobs with an artistic focus, such as professional musicians, are ranked fifth on a list of the most stressful occupations, preceded by teachers, nurses, managers, and security guards (van Fenema et al., 2013). However, the general public tends to associate music performance with pleasure, relaxation, and entertainment. Therefore, this population was often not thought to experience occupational and work stress, and consequently was overlooked when determining populations that require treatment for occupational stress (Hildebrandt et al., 2012). Eatough, Way, and Chang (2012) recognized that job stressors, such as job dissatisfaction, lack of autonomy, decreased social support and high workload, are risk factors for physical performance related symptoms. This finding suggests that musicians are at a high risk for developing physical performance related symptoms; however their needs may be overlooked due to inaccurate perceptions of the stressful nature of this occupation.

### **Physical Performance Related Symptoms**

Humans can suffer from occupation-related physical injuries that often from repetitive motions, forceful exertions, unnatural movements, and sustained (Eatough et al., 2012). Musicians have been affected by such injuries for over 100 years, according to the first research article published on the topic by British physician, George Vivian Poore (as cited in Zaza, Charles, & Muszynski, 21998). Zaza, Charles, and Muszynski (1998) stated that similar to assembly line workers and computer keyboardists, musicians are susceptible to musculoskeletal disorders, such as carpal tunnel syndrome, and they may last several years.

According to Guptill (2012), up to 89% of musicians experienced physical performance related symptoms at some point in their careers, and 76% of them reported that their injuries were significant enough to affect their ability to practice and perform their respective instruments. Another study conducted at the University of Sydney found that 79% of woodwind instrumentalists reported at least one performance related injury, and most of these performance related injuries were in the upper back, neck, and upper limbs (Ackermann et al., 2011). Most of the participants attributed their injuries to the postures sustained over extended periods of practicing (Ackermann et al., 2011). For example, studies have shown that because of limited employment opportunities in orchestras, flautists are at high stress as they are competing amongst each other and practice long hours (Ackermann et al., 2011). Other contributors perceived by the student musicians included limited rest breaks, a sudden increase in hours of practice, and performance anxiety (Ackermann et al., 2011).

Additional common factors related to physical performance related symptoms include the playing techniques of musicians, the instrument itself, and practice habits (Barton & Feinberg, 2008). The average musician practices for 2 hours before taking a rest break (Barton & Feinberg, 2008). However, it is suggested to take frequent, short rest or stretching breaks when performing static activities, such as practicing an instrument, in order to lower risk of injuries (Braveman & Page, 2012). Examples of other physical symptoms musicians report experiencing include muscle spasms, chapped lips, and numbness (Zaza et al., 1998).

Pain is frequently a result of physical performance related injuries. According to one study of orchestral musicians, 85% of the 243 participants experienced musculoskeletal pain within the last year, and 41% described their pain as 'disabling pain' (Leaver, Harris, & Palmer, 2011). Musicians can have difficulty accepting pain and it can cause a great deal of stress

(Wristen & Fountain, 2013). Andersen and colleagues (Andersen, Roessler, & Eichberg, 2013) explained that musicians might feel that pain is inevitable in the nature of their career, and they develop negative coping strategies. Ignoring the pain is a coping strategy many have adapted so as to continue toward their paths to success as musicians (Andersen et al., 2013). Because musicians have learned how to ignore pain, they continue to perform music with pain and can stay motivated until they can no longer concentrate on the occupation because of the level of pain (Andersen et al., 2013). This concept shared by many musicians is a topic of great concern, as it will likely present as a significant barrier when trying to address the needs of this population.

### **Psychosocial Performance Related Symptoms**

The occurrence of physical symptoms can be linked to psychosocial symptoms (Eatough et al., 2012). If untreated, pain can become chronic, and an alarming 50% of patients who suffer from chronic pain also have anxiety disorder and/or depression (Wristen & Fountain, 2013). Musicians are at risk for specific psychosocial performance related symptoms due to the nature of their occupational demands. PPRS have been shown to negatively impact occupational engagement, by affecting musicians' identities, wellness, sense of self-worth and their performance satisfaction (Guptill, 2012; Miller & Chesky, 2004).

Perfectionism is a common quality shared by musicians. Striving for perfectionism can be positive if under control; it allows for functional coping, conscientiousness, and healthy approaches to goal attainment (Kobori, Yoshie, Kudo, & Ohtsuki, 2011). Healthy perfectionism traits can be associated with 'facilitating anxiety,' a positive type of anxiety that drives musicians to fix their mistakes and practice more (Kobori et al., 2011). However, when perfectionism is exhibited in such a way that musicians set unrealistic goals for themselves and has negative

reactions and coping methods for imperfections, it becomes a symptom associated with performance anxiety and stage fright (Kobori et al., 2011).

Performance anxiety, one of the most commonly reported types of PPRS, has been studied extensively over the years. It can negatively impact the quality of musical performance, and is often associated with having a lack of control, an overwhelming concern for pleasing others, and fear of negative evaluation (Papageorgi, Creech, & Welch, 2011). Kirchner and colleagues (Kirchner et al., 2013) defined performance anxiety as “the experience of a persisting distressful apprehension about and/or actual impairment of performance skills in a public context to a degree unwarranted...” (p. 59). Research suggested that 69% of musicians experienced performance anxiety (Khalsa, Shorter, Cope, Wyshak, & Sklar, 2009) and that popular musicians considered performance anxiety to be one of the most stressful and debilitating parts of their occupation (Wills & Cooper, 1988).

Musicians’ working environments also impact their psychosocial wellness. Many musicians’ environments have high noise levels and a lack of space and light (Hildebrandt et al., 2012). Work environment stressors such as these, along with the many hours exposed to this environment and lack of sleep, are some of the factors that can contribute to psychosocial performance related symptoms (Guptill, 2012). Other factors that contribute to psychosocial performance related symptoms influenced by the work environment include competition, isolation in every day working life, social relationships, authoritarian organization structures, failure to achieve career goals, and financial uncertainty (Hildebrandt et al., 2012). Additionally, many musicians are regularly scrutinized by audiences, critics, and producers, resulting in added stresses due to the musicians’ focus on trying to fulfill others’ expectations (van Fenema et al., 2013). Furthermore, musicians’ work schedules may not be in sync with the typical workday.

Many professional musicians perform on evenings and weekends, and their touring schedules may be demanding. The job market for professional musicians is overcrowded and can be competitive, and most musicians report that there is often an element of uncertainty regarding their future and job security (van Fenema et al., 2013). Additionally, most musicians receive a low salary, despite the significant hours of practice and performance required (Guptill, 2011).

The issues faced within the job of professional musician ties back to Karasek's demand-control theory (1979). There are many job stressors and the musicians are highly qualified at what they do, however their work environments generally leave musicians with limited control to self-direct their own career paths due to external factors, such as auditions and required performances (Halleland, Harris, Sornes, Murison, & Ursin, 2009). This type of work environment can lead to a higher risk for both physical and psychosocial performance related symptoms. These issues are prevalent within this population and need to be addressed (Wristen & Fountain, 2013).

### **College Student Musicians**

College is a time during which many students experience life changes that can cause significant stress as many students leave their homes and families, make new friends, and acclimate to new lives with more independence (Chao, 2012). Vankim and Nelson (2013) reported that 60% of participants experienced high to very high stress when transitioning to college due to academic and social stressors. These stressors may include having to make life changing decisions, experiencing academic stress, uncertainty about the future, self doubt, family and relationship issues, homesickness, isolation, interpersonal conflict, financial distress, and/or self-doubt (Chao, 2012).

Along with the sources of stress mentioned previously, college musicians, a group within this population, experienced additional psychological stressors. Montello (2010) suggested three main reasons for this group being at risk for developing these psychological stressors. Firstly, similar to stressors stated previously, it was their first time leaving home for a significant period of time (Montello, 2010). All throughout their childhood, they relied on their parents for time management, health management and nutritional guidance, love, and care (Montello, 2010). They were now without these familiar supports and may not have had the knowledge of where to seek support once at college (Montello, 2010). The second and third reasons Montello listed were unique to college musicians. Professors constantly evaluated musicians, and there is little room for error; if they did not play up to par, they may be rejected from the music program or humiliated which can lead to psychosocial performance related symptoms (Montello, 2010). Lastly, for many college students, there were a large number of demands placed on college student musicians including assignments, practices, rehearsals, juries, auditions, and competitions. When all these demands are coupled with roommate or interpersonal issues, and normal issues that are a part of adolescent development, students may have had decreased physical and psychosocial well-being (Montello, 2010). Coupled with these issues, Zander and colleagues (2010) pointed out that college music students were often required to schedule practice time on their own, which can be a new and difficult task. Compared to other majors, such as nursing majors, music students had more flexibility with their schedules, which can contribute to more stress due to difficulty with independently handling a routine that lacks the structure they were used to having in secondary and elementary school (Zander et al., 2010). These new factors and stressors, if not able to be managed by college musicians, may result in PPRS.

## PSYCHOSOCIAL SYMPTOMS AND COLLEGE MUSICIANS 12

In addition to the psychological stressors, college musicians also face the risk for PPRS. Firstly, upon entry to college, high expectations are established, and intense training to work on technical abilities, such as fingerings, begins (Barton & Feinberg, 2008). This intense training causes a drastic increase in hours of practice per day (Barton & Feinberg, 2008). In fact, by the time musicians become professionals, they have played an average of 10,000 hours (Guptill, 2011). A combination of these factors can contribute to physical performance related symptoms. Furthermore, research findings have shown that musculoskeletal injuries and pain manifest themselves early in the training process to becoming a professional, adding to the complexities of this issue (Wristen & Fountain, 2013). In a study, 25% of university music students reported a music-related health complaint prior to beginning their studies at university (Spahn, Strukely, & Lehmann, 2004).

Addressing the physical and psychological stressors experienced by college musicians is further complicated by their commonly chosen methods for managing their symptoms. In regards to physical symptoms, most college musicians choose to ignore them. The findings from Ackermann and colleagues' (2011) study mentioned previously about college flautists and their decision to not seek help, is in line with Anderson and colleagues' (2011) study that musicians invalidate and ignore their pain and injuries in attempts to achieve success in their musical careers. Psychological stressors are commonly also ignored, or are managed with negative coping strategies. Spahn, Richter, and Zschocke (2002) indicated that 12% of music students experienced playing related psychosocial symptoms such as feelings of depression and anxiety, yet 79% did not seek professional help. Additionally, many college students, musicians included, reported that they lack the familial and peer support they used to have, and seeking their support was a part of their positive coping strategies (Chao, 2012). Positive social support can be

beneficial as it can provide as a buffer against stress and support well-being (Chao, 2012). However, the results of recent research suggest that social support has been decreasing throughout the past decade (Chao, 2012). People with low social support are more likely to engage in negative coping strategies. Roth and Cohen (1986) described negative coping strategies as strategies that result in little to no effectiveness. Negative coping strategies have further described by other researchers. One study explained that dysfunctional coping strategies are seen in three different ways: venting of emotions, behavioral disengagement, and mental disengagement (Carver, Scheier, & Weintraub, 1989). Examples of negative coping strategies used by college students with low social supports include leading more sedentary lifestyles, engaging in alcohol and drug use, sleeping too much or too little, browsing the Internet, complaining about their stress, and watching television or movies (Thorsteinsson & Brown, 2008; Sideridis, 2008). Given the physical and emotional demands of musicianship, and because dysfunctional coping strategies can become habit, it may be critical to provide this population with the education, tools, and resources, to practice positive, effective, coping strategies starting early in their musical careers.

### **Role of Health Professionals**

Despite the risk of psychosocial and physical symptoms, Guptill (2011) suggested that few professional or student musicians seek services from doctors to help address their symptoms. Ackermann and colleagues' study (2011) indicated that of 95% of college student flautists who reported suffering from performance related injuries, none sought help from health professionals. One of the reasons identified by most self-employed musicians was that specialized health care for musicians was expensive and scarce (Guptill & Golem, 2008). Physical symptoms can bring

financial hardship to musicians due to costs of interventions as well as the cost of missing paid work opportunities (Zaza et al., 1998).

A more prominent reason for the low service seeking behavior of musicians may be the overarching theme of fear; the self-realization of having performance related symptoms and getting diagnoses might be a frightening experience for musicians (Zaza et al., 1998). Words musicians use to describe their symptoms, when they perceive their symptoms to be legitimate performance related injuries, were when they were ‘traumatic,’ ‘devastating,’ or ‘frightening’ (Zaza et al., 1998). The musicians in this study also described that they may consider consulting health professionals if their symptoms were ‘chronic,’ ‘severe,’ or ‘unusual,’ and they could not control the symptoms on their own anymore (Zaza et al., 1998). In addition, musicians reported that there was a negative stigma attached to seeking help for their physical and psychosocial symptoms; they feared that they would receive less respect from their colleagues, a diminished reputation, and even job loss (Zaza et al., 1998). Specifically, musicians feared that health professionals would tell them to stop performing because health professionals may not know what to do for them (Zaza et al., 1998). Often, it was hard to diagnose the root cause of the pain. Additionally, taking a break from playing as advised by some health professionals, did not address the ergonomic or biomechanical causes of the problem at hand, and could lead to secondary issues, such as increased financial insecurity and stress (Guptill & Golem, 2008). Many musicians feared that their careers would end due to performance related symptoms; ending their musical careers could be an especially frightening option to consider, as their identity was often closely tied with being a musician (Guptill & Golem, 2008). Thus, musicians have reported that they suppressed or ignored their symptoms until the symptoms interfered with their ability to play their instruments, and it was distracting (van Fenema et al., 2013).

Coupled with these common feelings shared by musicians, many musicians also have stated that they felt their performance related symptoms, especially physical, are not validated by health professionals. They found that health professionals often dismissed them as employees who exaggerated their injuries in order to acquire worker's compensation (Zaza et al., 1998). Andersen and colleagues (2013) reported that musicians were trained to cope with their physical and psychosocial symptoms by placing the feelings of pain in the back of their mind. Their ambitions were focused on performing music at the highest level, and outweighed the negative impacts it may have on their bodies (van Fenema et al., 2013). The rarity of musicians who seek help from health professionals, the negative experiences musicians have reported having with health professionals, and the generalizations musicians have about health professionals, indicate a need to question the level of client-centered care and current approaches being used to address the needs of musicians.

Several studies have been published about attempts made by allied health professionals to learn more about college musicians and how to address their needs from a preventative standpoint. For example, courses and workshops about prevention of performance related symptoms have been implemented in music schools and universities, but few studies have been published on their long-term impact. Zander and colleagues (2010) found that although college musicians are able to identify the causes of their performance related symptoms. No research to date has followed up on their implementation of their knowledge into their practice and performance routines in order to prevent future performance related symptoms. In another study, Barton and Feinberg (2008) investigated the effectiveness of a health promotion and injury prevention course for freshman music majors. They found that learned health and injury prevention strategies can take about 6 weeks to become a habitual part of musicians' daily

routines (Barton & Feinberg, 2008). College musicians experience the same sources of physical, environmental, and emotional occupational stressors as professional musicians, as well as the physical and psychosocial symptoms listed previously (Hildebrandt et al., 2012). This comparison brings to attention that college student musicians are a particularly important population to address because any symptoms, whether physical or not, have the potential to impact their many roles (e.g., musicians, students, peers, family members, and future professionals).

### **Role of Occupational Therapy**

The primary role of occupational therapy practitioners is to help people continue to pursue the occupations that provide meaning to their lives with the most independence and ease possible (AOTA, 2012). Musicians are unique from other professionals in that, on average, most professional musicians begin singing or playing their instruments between the ages of five and nine, and choose their career paths during their adolescent years (van Fenema et al., 2013). Consequently, music and being musicians play an integral role in their identity formation (van Fenema et al., 2013). Physical and psychosocial symptoms related to music performance can hinder peoples' occupational engagement and overall well-being (van Fenema et al., 2013). Research has suggested that such a close connection between occupation and an individual's identity and sense of self-worth lead to high rates of depression and anxiety amongst musicians (Guptill, 2012).

Occupational disruption is a term that describes the human experience of being unable to engage in occupations at the same level and with the same level of enjoyment as previously (Bryant, Craik, & McKay, 2004). Occupational disruption can potentially cause occupational alienation, which is defined as "the absence of meaning or purpose in the occupations of daily

life” (Bryant et al., 2004, p. 283). Musicians have a high risk of experiencing occupational disruption when they are unable to engage in musical performance for a certain length of time due to unmanageable or irresolvable pain or injury (Guptill, 2012). In order to prevent occupational disruption amongst musicians, it is imperative to address musicians’ performance related symptoms (Zander et al., 2010). Being a musician is often integral parts of musician’s identities, and performing music gives their lives meaning and purpose (Voltmer, Schaur, Schroeder, & Spahn, 2008).

The current prevalence of performance related symptoms and their potential effect on peoples’ abilities to function as musicians suggests that musicians may benefit from occupational therapy. Any symptom that impacts college-aged musicians to play music may be life altering, therefore it is important for occupational therapists to learn about this population. Limited research has been published about the current role of occupational therapy with musicians. Two studies listed the health professionals sought by musicians for their injuries and of the professional help sought, and neither study lists occupational therapy as an option (Ackermann et al., 2011; Spahn et al., 2002). Spahn and colleague’s (2002) study even offered an option to list other types of health professionals college musicians sought for treatment, and occupational therapy was still not listed by the musicians, showing that both researchers and musicians alike are unfamiliar with occupational therapy and its potential role in addressing the needs of this population (Ackermann et al., 2011).

Additionally, and perhaps more importantly, the effects of performance-related symptoms among college-aged musicians on occupational engagement and performance have not been fully explored. Guptill and Golem’s (2008) study showed that 14% of musicians reported that their symptoms caused moderate to severe difficulty in physical tasks including

opening a jar; additionally, 10% reported they had moderate to severe difficulty engaging in recreational activities, indicating that performance related symptoms may affect engagement in other daily occupations. Zaza and colleagues (1998) found similar results wherein music students in their study reported experiencing occupational problems, including difficulty with opening doors, lifting cups, and putting on jackets. However there have been no studies that investigated the impact of psychosocial performance related symptoms on occupational engagement.

This gap in knowledge invites the idea of conducting further research in order to understand how occupational therapists can play a role in the prevention and treatment processes. Occupational therapists have the training to assess the dynamic interactions between people, their occupations, and their environments in order to help implement changes that facilitate occupational performance and engagement (AOTA, 2012). They work with the clients to create solutions to the issues that are impacting their roles, and with this goal in mind, occupational therapy practitioners are ideal health professionals to assist college musicians. Barton and Feinberg (2008) describe the role of occupational therapy practitioners to be consultants and educators, with implementing education as early as possible with musicians. However, occupational therapy practitioners can only provide the best treatment possible for college-age musicians if they gain a better understanding of the nature of being a college-student musician and their perceptions of their performance related symptoms. For college student musicians, performance-related injuries may impact their roles including being students, hobbyists, musicians, and aspiring professional musicians. To this end, the purpose of this survey design research study is to gain insight into the impact of the perceived psychosocial symptoms experienced by college student musicians.

## **Chapter 3: Methods and Procedures**

### **Research Questions**

1. Do gender, year in school, stress, or perceived course load have an impact on the amount or type of PPRS sustained by college musicians, the impact on occupational engagement, the factors that contribute to PPRS, or how well students are able to manage their symptoms?
2. Does the number of PPRS experienced influence college students' perceived abilities to manage their symptoms?
3. Does the number of PPRS college musicians experience influence occupational engagement?
4. What are the barriers to seeking treatment for symptoms?

### **Hypotheses**

Hypothesis 1: College musicians who report more PPRS will report decreased occupational engagement, decreased symptom management, and will report having more factors that contribute to their PPRS.

Hypothesis 2: College students who report higher PPRS will report more difficulty with occupational engagement.

### **Limitations**

There are several limitations to this study. The study was conducted with a small convenience sample at one college; therefore, the results cannot be generalized to all college musicians at other colleges, universities, or conservatories. Additionally, the online survey was open for a relatively short period of time, did not consider the various changes that can occur throughout a semester or school year that could influence participants to respond to the survey

differently. Anonymous online surveys leave room for participants to interpret the survey differently since they could not seek clarification. The survey asked participants to report their stress levels over 2-3 months and 6-12 months, and participants had to self-report based off memory, potentially decreasing the accuracy of responses. Lastly, the rationale for how students rated the effectiveness of outside services was unclear. It is unknown whether they based it off firsthand experience with the services, what they have heard from others', or general opinions; the specific purpose of seeking the services was not specified. The limitations of this study provide the foundation for what should be considered for future research of this population.

### **Delimitations**

The researchers chose to administer the survey to one institution. This parameter was set for the researchers' convenience, and to best capture a population going through similar experiences. To further ensure participant consistency, only full-time college students were eligible to participate in the study. Establishing this delimitation allowed the researcher to capture a population with the most similar college experiences and situations. The survey was anonymous and all questions and scales were optional to answer in order to ensure confidentiality and to encourage honesty and openness with questions that may be sensitive topics. Lastly, the researchers created a new survey due to difficulty identifying any preexisting tools or surveys that adequately covered all the areas of interest. Thus, the tool did not have established reliability or validity.

### **Assumptions**

This research was based on three assumptions. First, the participants met all inclusion criteria stated at the beginning of the survey and that they provided honest responses. Second, the participants in this study were assumed to be studying music with the intention of becoming

professional musicians and/or music educators. The final assumption is that the questions and scales within the survey reliably measured the intended variables.

### **Participants**

All full-time students in the music school at Ithaca College ages 18 and older were eligible for this study. Students who were out on leave at the time of the study (study abroad, medical, family, etc.) were not eligible to participate. All participants provided informed consent online prior to beginning the survey. Participant surveys were excluded from the data analysis if they failed to respond to the survey questions beyond the primary demographic information. Of 570 eligible music students, 177 responded (31%). Of those 177, 142 provided complete survey responses, yielding an overall response rate of 25%. The participants comprised 61 males (43%) and 81 females (57%). The majority of participants were in their junior year of college (28.9%), followed by freshmen (21.8%), sophomore (19.7%), senior (16.9%), and graduate year (12.0%). The most common majors reported by the participants were Music Education B.M (27.5%), Performance and Music Education B.M (26.1%), and Performance B.M (24.6%). The following groups were the most common primary instruments of the participants: voice (31.2%), percussion (19.1%), and woodwinds and strings (17.0% each).

### **Survey Development and Design**

This study focused on understanding the various psychosocial performance related symptoms perceived by college student musicians and their impact on daily occupations. The researcher designed an anonymous web-based survey utilizing Qualtrics survey software (Qualtrics, 2014). A link to a separate survey was provided at the end of the main survey for students who wished to provide their email addresses to enter to win one of the three \$25 iTunes gift cards. This design kept the main survey responses separate from email addresses. Neither the

researcher nor the thesis advisor was able to see the email addresses provided in the second survey, and a research assistant randomly selected the three winners of the gift cards.

The contents of the survey included 21 multiple-choice questions and scales that were collected and created with the intention of answering questions raised by researchers and filling in gaps from previous research studies about musicians conducted mostly by occupational therapy practitioners, psychologists, psychiatrists, behavioral scientists, and music professors (Chao, 2012; Ying & Lindsey, 2010; Schneider & Chesky, 2011; Eatough et al., 2012; Papageorgi, Creech, & Welch, 2011). The list of psychosocial performance related symptoms came from symptoms that were reported by professional musicians, college students, and employees of various jobs found in previous research (Chao, 2012; Eatough et al., 2012; Kokotsaki & Davidson, 2003; Liu, Liu, Mills, & Fan, 2013; Stoeber & Eismann, 2007). The options listed also cover the symptoms commonly associated with diagnoses of generalized anxiety and depression (National Institute of Mental Health, 2009). The demographic questions were included to help the researcher investigate how certain characteristics can impact their perceptions of psychosocial performance related symptoms. The Occupational Therapy Practice Framework, 2<sup>nd</sup> Ed (AOTA, 2012) guided the researcher's development of choices for the questions inquiring how psychosocial performance related symptoms impact college musicians' everyday occupations, what factors contribute to their performance related symptoms, and how they choose to manage their perceived psychosocial performance related symptoms. Specifically, the researcher considered areas of occupation, performance skills, performance patterns, contexts, activity demands and client factors when developing the questions (AOTA, 2012). Comments sections were included after each survey item, giving participants the option to

further expand on their responses and/or provide clarification. These sections added a beneficial qualitative component to the study.

Additionally, discussions with the thesis advisor and a physical therapy professor with expertise in working with musicians and performers, contributed to the development and refinement of the survey. The survey was then piloted using four field testers, who were all alumni of the institution's music school. The survey was modified upon collection of the field testers' feedback. Specifically, voice was added to the list of instruments that the participants could check off as their primary, secondary, or hobby/leisure instruments. See Appendix A for the full survey.

### **Methodology and Recruitment**

The Human Subjects Review Board (HSR) of Ithaca College approved the anonymous survey design research study on October 31<sup>st</sup>, 2013. See Appendix B for the HSR Proposal and Approval letter. A convenience sample was used for this study, as only music students of the institution of which the researcher attended were eligible participants for the study. Upon HSR approval, the researcher sent an email to all faculty members within the institution's music school asking them to forward the study information and survey link to their respective students. The researcher also provided contact information for questions or concerns, and offered the opportunity for the professors to request that the researcher speak to his/her class in person about the study. The researcher spoke to two separate classes as requested by the respective music professors. Additionally, the survey information was posted on various music-related Facebook groups for Ithaca College and on the college's online newsletter in the student news section. A follow up reminder was posted on the online newsletter two weeks later in order to solicit more responses.

## **Chapter 4: Manuscript**

The manuscript below is formatted for submission to the peer-reviewed journal titled *Occupational Therapy in Health Care*. See Appendix C for author guidelines.

Abstract

**Background:** Researchers have previously explored the lives of professional musicians and have identified the high prevalence of experienced physical injuries and psychological stressors.

However, there is limited research looking at the impact of perceived psychosocial performance related symptoms (PPRS) on occupational engagement among college musicians. The purpose of this survey design research study was to explore the impact of the perceived psychosocial performance (PPRS) related symptoms experienced by college student musicians on their occupational engagement.

**Methods:** An online, anonymous survey was administered to college musicians at a small college in the Northeastern United States. Participants were 142 music majors (25% response rate).

**Results:** College musicians experience a high prevalence of PPRS, with stress, anxiety, and frustration being the three most commonly reported symptoms. The inability and/or difficulty with managing these PPRS negatively impacted various areas of their every day lives. For example, many students with PPRS experienced decreased hours of sleep, and difficulty with academics and social participation. Contributing factors to PPRS and barriers to treatments were identified. High stress commonly contributed to amount of PPRS college musicians reported, their perceived abilities to manage their symptoms, and their level of difficulty with occupational engagement.

**Implications:** The information gathered in this study provides a deeper understanding of the lives of college musicians and their needs that are not currently being met. Occupational therapists could potentially address the needs of this population, through collaboration with music professors to provide education about coping strategies, symptom management,

prevention, or time management strategies. Occupational therapists could also help college musicians manage and/or eliminate the symptoms and their causes, which would allow them to continue to successfully pursue the occupations that give their lives meaning and purpose.

Keywords: stress, symptom management, health promotion

### **The Impact of Psychosocial Performance Related Symptoms of College Musicians**

Music is often associated with being a source of pleasure, relaxation, and entertainment (Hildebrandt, Nubling, & Candia, 2012). With this association in mind, musicians' lives may seem glamorous at first glance, since it may be thought that their sole purpose for performing is to captivate, move, and elicit certain emotions amongst their audiences through their work (Hildebrandt et al., 2012). On the contrary, research shows that professional musicians are placed under significant amounts of pressure (Barton & Feinberg, 2008), which can have an impact on their everyday lives. Musicians experience a variety of occupational stressors within their professions that can put them at risk for decreased health and well-being (Wristen & Fountain, 2013). Some of these stressors include high workloads, job and financial insecurity, and high physical and emotional demands (Barton & Feinberg 2008; Ginsborg, Kreutz, Thomas, & Williamson, 2009; Guptill, 2011). Additionally, many musicians feel that in their profession, they have limited control over their stressors, which can further lead to physical and psychosocial symptoms and injuries, and decreased job satisfaction (Karasek, 1979; Halleland, Harris, Sornes, Murison, & Ursin, 2009).

Professional musicians are unique from other professions in that their musical careers usually stem from a hobby they developed during their childhood, and through musicians' years of development to becoming professionals, their identities become closely tied with being musicians (Guptill & Golem, 2008; Andersen, Roessler, & Eichberg, 2013). While there is certainly value in pursuing professions that are driven by passion, psychological factors, such as anxiety and depression, are sometimes seen with those who have such a close connection between their professions, their identities, and their self-worth (Guptill, 2012). Additionally, it can complicate the processes of diagnosis, treatment, and prognosis of physical and/or

psychosocial performance related symptoms (Guptill, 2012). For example, research has suggested that musicians may have higher rates of psychosocial symptoms, such as depression and anxiety, if they experience occupational disruption (Bryant, Craik, & McKay, 2004; Guptill, 2012). Occupational disruption can occur when musculoskeletal and/or psychosocial related symptoms leave musicians unable to practice and perform to their satisfaction or to the required capacity (Bryant et al., 2004; Guptill, 2012).

Musicians are likely to experience performance related symptoms and occupational stressors that can result in future job strain well before they enter the professional world. Often these symptoms begin in the early stages of their musical education (Zander, Voltmer, Spahn, & Mus, 2010). For example, 25% of university music students reported a playing related complaint, including as musculoskeletal symptoms, pain and performance anxiety, prior to beginning their studies (Spahn, Strukely, & Lehmann, 2004). This statistic suggests that these symptoms commonly begin in high school or even earlier in adolescence.

Extensive research has been conducted on the prevalence of musculoskeletal related symptoms among college students. In a study, 95% of university musicians experienced pain or injuries related to playing their instruments (Ackermann, Kenny, & Fortune, 2011). Of the 95% who reported pain or injuries, 79% did not seek help. Similar findings were reported in other studies (Ackermann et al., 2011; Zander et al., 2010).

Beginning in college, high expectations are established, as well as intense training to work on technical abilities, such as fingerings (Barton & Feinberg, 2008). College in itself is a transitional time that commonly causes feelings of stress (Chao, 2012). Along with the frequently shared stressors experienced by college students across the board, such as homesickness, isolation, interpersonal conflict, and financial distress, college musicians also

experience frequent evaluation from their professors (Chao, 2012; Montello, 2010). Other stressors include the little room for error, in that their success in college and spot in their program is contingent on how they do during competitive situations such as auditions, juries, competitions, and performances (Montello, 2010). Thus in order to succeed, college musicians drastically increase their hours of practicing and by the time musicians become professionals, they have practiced an average of 10,000 hours (Guptill, 2011). Inevitably, 10,000 hours of practicing and performing in postures and positions sustained for extended periods of time, and using repetitive motions, can result in increased risk of musculoskeletal injuries (Guptill, 2011).

While the prevalence, treatment, and prevention of physical performance related symptoms among college student musicians have been well documented, fewer studies have investigated this information in association with psychosocial performance related symptoms (PPRS). Many studies are published about the prevalence of clinical depression and generalized anxiety among college and professional musicians. However, minimal research has expanded beyond this topic by studying the prevalence of other types of PPRS that are not necessarily clinically diagnosable, nor how to prevent or treat them. It is important for health professionals to manage, resolve, and strive to prevent these symptoms, before they reach the point of jeopardizing musicians' professional careers and affecting other areas of their lives.

Occupational therapy practitioners are ideal professionals to work with musicians as they have specialized knowledge and skills related to analyzing meaningful occupations, facilitating occupational performance and engagement, and preventing injuries (AOTA, 2012).

To this end, the purpose of this survey design research study was to gain insight into the impact of the perceived PPRS experienced by college student musicians on their occupational engagement. 'Psychosocial performance related symptoms' was defined as: symptoms whose

origins are related to, or are worsened by, the performing and practicing of musical instruments.

Symptoms can include, but are not limited to the following: anger, anxiety, frustration, emotional exhaustion, stress, dissatisfaction, fear, decreased self-confidence, performance anxiety or stage fright, fatigue, and physiological symptoms that can be associated with psychosocial concerns.

Specifically, the researcher examined the following:

1. Do gender, year in school, stress, or perceived course load have an impact on the amount or type of PPRS sustained by college musicians, the impact on occupational engagement, the factors that contribute to PPRS?
2. Does the number of PPRS experienced influence college students' perceived abilities to manage their symptoms?
3. Does the number of PPRS college musicians experience influence occupational engagement?
4. What are the barriers to seeking treatment for symptoms?

## **Methods**

### **Participants**

Participants included 61 male (43%) and 81 female (57%) college music majors. The most common majors reported were Music Education B.M, (28%), Performance and Music Education B.M (26%), and Performance B.M (25%). The ages reported were as follows: 18 (21.8%), 19 (14.8%), 20 (30.3%), 21 (12.7%), 22 (9.9%), 23 (9.2%), and 24+ (1.4%).

### **Measures**

The focus of this study was on understanding the various psychosocial performance related symptoms perceived by college student musicians and their impact on daily occupations. The researchers designed an anonymous web-based survey utilizing Qualtrics survey software

(Qualtrics, 2014). The survey included 21 multiple-choice and Likert-type questions that were created to fill gaps from previous research studies about musicians, conducted mainly by occupational therapy practitioners, psychologists, psychiatrists, behavioral scientists, and music professors (Chao, 2012; Ying & Lindsey, 2010; Schneider & Chesky, 2011; Eatough, Way, & Chang, 2012; Papageorgi, Creech, & Welch, 2012). Comments sections were included after each survey item, giving participants the option to further expand on their responses and/or provide clarification. The survey was pilot tested before implementation. Seven music school alumni were contacted, and 4 out of 7 completed the pilot survey. The survey was modified upon collection of the field testers' feedback such that voice was added to the list of instruments that the participants could check off as their primary, secondary, or hobby/leisure instruments.

**Demographic items and background items.** Participants reported on 6 demographic characteristics (e.g., age, gender, year in school, major, instrument played). Background questions included self-ratings of stress, perceived class load (reported as 'light', 'moderate', or 'heavy'), and hours of instrument practice in- and outside of class per week.

**Psychological performance items.** A list of 19 PPRS came from symptoms that were reported by professional musicians, college students, and employees of various jobs (Chao, 2012; Eatough et al., 2012; Kokotsaki & Davidson, 2003; Liu, Liu, Mills, & Fan 2013; Stoeber & Eismann, 2007). The list of symptoms also covered the symptoms commonly associated with diagnoses of generalized anxiety and depression (National Institute of Mental Health, 2009). Participants were asked to indicate which, if any, of the following performance related symptoms they were currently experiencing. Participants were able to check all symptoms that applied.

**Impact of PPRS.** The Occupational Therapy Practice Framework (AOTA, 2008) guided the development four questions inquiring how PPRS impacted college musicians' occupational

engagement (e.g., example item), what factors contribute to their PPRS, how they choose to manage their perceived PPRS, and how well they believe they manage their symptoms.

Specifically, the researcher considered areas of occupation, performance skills, performance patterns, contexts, activity demands and client factors when developing the questions (AOTA, 2008). Participants rated each item on a scale ranging from 0 (*never*) to 3 (*always*).

### **Procedures**

After receiving institutional approval, a convenience sample was recruited. A list of all faculty members from the music school using the institution's website was compiled and faculty was sent an email asking them to forward the study information and anonymous survey link to their respective students. The researcher also provided contact information for questions or concerns, and offered the opportunity for the professors to request that the researcher speak to his/her class in person about the study. The researcher spoke to two separate classes as requested by the respective professors. Additionally, the survey information was posted on various music-related Facebook groups for the institution and on the college's online newsletter in the student news section. A follow up reminder was posted on the online newsletter two weeks after the initial posting. A link to a separate survey was provided at the end of the main survey for students who wished to provide their email addresses to enter to win one of the three \$25 iTunes gift cards, provided as a participation incentive. This design kept the main survey responses separate from email addresses. The researchers were unable to see the email addresses in the second survey and three gift card winners were randomly selected.

### **Data Analysis**

The survey data were analyzed using the Statistical Package for Social Sciences version 20 (SPSS v. 20). Sample characteristics were examined through a descriptive analysis. A series

of hierarchical multiple regression analyses were used to examine how gender, year, and perceived course load were related to stress when looking at total symptoms, contributing factors, difficulty with occupational engagement, and management of symptoms. A Pearson correlation was used to examine associations between total PPRS on occupational engagement. A significance level of  $p < 0.05$  was used for all results.

## Results

### Demographic Information

**Instrument and practice.** Students reported their ‘primary,’ ‘secondary,’ and ‘hobby/leisure’ instruments from a list of 20 instruments and ‘other’ instruments. Participants reported participating in six primary overarching instrument groups: voice (31.2%), percussion (19.1%), woodwinds (17%), strings (17%), brass (14.9%), and other (0.71%). Participants indicated that they typically practiced their respective instruments outside of class for 11-15 hours per week (20.4%; 0-6 hours per week, 33.8%; 6-10 hours per week, 26.1%; 16-20 hours per week, 19.7%).

**Workload.** The majority of participants reported having a heavy course load (heavy, 47.9%; moderate, 40.8%; light, 11.3%). Most participants reported 24 or more hours of class per week (28.2%) and reported sleeping an average of 6.23 ( $SD = 1.19$ ) hours per weeknight.

**PPRS.** The three most common PPRS reported were stress (83.1%), anxiety (66.2%), and frustration (65.5%). Students reported an average of 7.11 ( $SD = 4.22$ ) psychosocial performance related symptoms. Additionally, graduate students reported experiencing the most performance related symptoms ( $M = 8.04$ ,  $SE = 1.19$ ), followed by juniors ( $M = 7.07$ ,  $SE = .996$ ), seniors ( $M = 6.31$ ,  $SE = .862$ ), freshmen ( $M = 5.82$ ,  $SE = .998$ ), and sophomores ( $M = 5.79$ ,  $SE = 1.09$ ).

**Stress and contributing symptoms.** The participants experienced, on average, the most stress within the past 2 weeks of completing the survey ( $M = 6.98$ ;  $SD = 2.04$ ), followed by 2-3 months ( $M = 6.82$ ;  $SD = 2.03$ ), and 6-12 months ( $M = 5.96$ ;  $SD = 2.26$ ). Participants reported that PPRS ‘always’ impacted their ability to perform music (40.1%), that they ‘always’ experience pain and/or discomfort (31%), and that they ‘always’ experience fatigue (15.5%). The majority of students indicated that personal expectations (66.9%), time demands (59.2%), and perfectionism (54.2%) were contributing factors for the presence of their psychosocial performance related symptoms.

On average, students rated their ability to manage their PPRS at 6.17 out of 10. When asked about the methods used to manage their psychosocial performance related symptoms, 97% of respondents reported talking to family and/or friends between one and seven days per week, 95% reported sleeping, and 93% reported spending time alone. Yoga, massage, and Feldenkrais were reported to be the top three most effective treatment methods for the alleviation of their performance related symptoms.

**Impact of PPRS.** A series of hierarchical multiple regression analyses were used to examine the impact of gender, age, perceived course load and stress on total PPRS symptoms, occupational engagement, contributing factors, and management of PPRS symptoms. Model I included gender, year in school, and course load on various factors, including PPRS, difficulty with occupational engagement, contributing factors for PPRS, and management of PPRS. Model II included stress within the last 2 weeks, 2-3 months, and 6-12 months. In all situations, Model II significantly improved fit when compared to Model I.

**Total PPRS.** Model I significantly predicted 17% of the variance in total reporting of PPRS symptoms [ $F(3,136) = 9.04$ ,  $p < .01$ ]. Model II significantly improved model fit ( $\Delta R^2 =$

.22,  $p < .01$ ) and predicted 39% of the variance in total reporting of PPRS [ $F(6,133) = 14.03, p < .01$ ]. Contributions of individual variables are reported in Table 2. With every unit increase in perceived stress level over the past 2 weeks, there was a .63 increase in reporting of PPRS, and with every unit increase in perceived stress level over 6-12 months, PPRS reporting increased by 0.49.

**Impact on occupational engagement.** Model I significantly predicted 7.8% of the variance in impact of PPRS on occupational engagement [ $F(3,136) = 3.86, p < .01$ ]. Model II significantly improved model fit [ $\Delta R^2 = .28, p < .01$ ] and predicted 36% of the variance in impact of PPRS on occupational engagement [ $F(6,133) = 12.4, p < .01$ ]. Contributions of individual variables are reported in Table 2 with perceived class load, difficulty and stress level over the last 2 weeks and over the past 2-3 months relating to significant increases difficulty with occupational engagement.

**Contributing factors to performance related symptoms.** Model I significantly predicted 17% of the variance in contributing factors to PPRS [ $F(3,135) = 9.34, p < .01$ ]. Model II significantly improved model fit [ $\Delta R^2 = .18, p < .01$ ] and predicted 36% of the variance in contributing factors to PPRS [ $F(6,132) = 12.1, p < .01$ ]. Contributions of individual variables are reported in Table 2. Gender, and stress level over 2 weeks both significantly influenced the total number of factors that contributed to PPRS. Females were more at risk for experiencing contributing factors to their PPRS.

**Management of symptoms.** Model I significantly predicted 5.6% of the variance in perceived management of psychosocial performance related symptoms [ $F(3, 133) = 2.63, p < .01$ ]. Model II significantly improved model fit [ $\Delta R^2 = .17, p < .01$ ] and predicted 22% of the variance in perceived management of PPRS [ $F(6,130) = 6.27, p < .01$ ]. Contributions of

individual variables are reported in Table 2 and suggest that the ability to manage symptoms increased with every year participants were in school and decreased as stress levels over the past 2 weeks increased.

**Relationship between PPRS, management of symptoms, and occupational engagement.** A moderate negative correlation was found between the total PPRS and ability to manage symptoms,  $r(138) = -.48, p < .01$  suggesting that as the total number of PPRS increased, the ability to manage symptoms decreased. As displayed in Table 3, small to moderate correlations were found between the number of PPRS and occupational engagement. Participants reported that higher numbers of PPRS reported impacted occupational engagement in each area except 'increased hours of sleep'.

#### **Barriers to Seeking Treatment for PPRS**

The participants reported that the three most common barriers for seeking treatment for performance related symptoms were decreased time to seek outside treatment (85.2%), financial strain (59.2%), and unfamiliarity with what types of treatments are effective (50.7%).

#### **Discussion**

The purpose of this research was to provide occupational therapists, other music and health professionals, and musicians, with information regarding the impact of perceived PPRS experienced by college student musicians on their occupational engagement, and the everyday factors that contribute to such symptoms. Results indicated that this cohort of college musicians experienced a high prevalence of PPRS, and a significant amount of the participants reported that their PPRS impact their ability to perform music. There were several factors that significantly contributed to PPRS and ability to manage its symptoms. One significant factor was gender, with females reporting experiencing more PPRS and more contributing factors than males even when

stress was taken into consideration. These findings are in line with previous research studies that have shown that female musicians experience greater levels of performance anxiety, stress, and psychological symptoms than males (Ginsborg et al., 2009; Ying & Lindsey, 2010; Papageorgi et al., 2011). It is possible that males underreport PPRS, as women frequently are more open about revealing their health and emotional issues than males are (Zander et al., 2010).

Another factor that contributed to PPRS was stress. For all three time frames of stress, increases in stress were correlated with significant increases in musician's reported difficulty with occupational engagement and in the amount of factors that contributed to their symptoms. Stress reported over the past two weeks had the greatest impact, as it showed significant correlations with increased PPRS reported, increased difficulty with engagement in daily occupations, and more factors that contributed to symptoms. Additionally, stress had a negative correlation with perceived ability to manage their symptoms, meaning that as the level of stress within the past two weeks increased, the ability to manage symptoms decreased. Although not statistically significant, an interesting finding was that the perceived levels of stress, on average, slightly decreased as the time frame increased. This increase might be attributed to the idea that people are most sensitive to stress experienced in the present, but as time progresses and people are further removed from the stress, they reflect and are better able to put into perspective the degree of stress they experienced at that point in time.

The results showed that with every increase in year in school, the perceived ability to manage symptoms significantly increased, which might be attributed by a combination of factors. Upperclassmen may have adjusted to the college transition and have developed more coping strategies (Kreutz, Ginsborg, & Williamson, 2008). They may have established strong interpersonal relationships with students and professors with whom they can go to for support,

and may have adopted strategies for managing their performance related symptoms. They also could have learned how to manage symptoms in classes. This finding suggests that upperclassmen may serve as an important resource for underclassmen. A peer mentoring program could be valuable to link these groups together in order to help underclassmen develop coping strategies earlier on in their college careers to improve management of performance related symptoms.

In this study, college musicians have been reported to experience a high prevalence of PPRS, and findings showed that higher numbers of reported PPRS is indicative of decreased perceived ability to manage PPRS, and more difficulty with occupational engagement. The relationship between these three factors is discussed in Ying and Lindsey's (2010) study, whose results showed that college students who reported lower levels of stress were more likely to routinely implement more health promotion practices to manage and prevent stress than students who reported higher levels of stress. Examples of such health promotion practices included getting enough sleep, spending time with close friends, and exercising regularly (Ying & Lindsey, 2010). Not being able to effectively manage PPRS through exercising health promotion practices can result in difficulty in areas occupational engagement, including being able to exercise regularly, getting enough sleep, participating in hobbies, and having healthy, active, social lives. The prevalence of PPRS and its evident negative impact on the lives of college musicians suggests an interest for occupational therapists to advocate for their role in addressing their needs, through addressing their PPRS and its causes directly and by emphasizing the importance of implementing health promotion practices to prevent and manage PPRS.

### **Treatment Methods**

Students reported that yoga, massage, and the Feldenkrais method had been the most effective services for treating their symptoms, and had the most total responses in the researchers' survey. Upon further investigation, it was found that several Feldenkrais courses, along with two elective courses, titled "Yoga for Musicians" and "Relaxation Techniques for Performance Anxiety", are offered at the institution's music school, which could have contributed to the higher responses for these services. As for the effectiveness of Occupational Therapy (OT), of the 15 respondents who indicated having received OT, 6 reported it to be effective and 9 reported OT to not be effective. This finding is somewhat expected and supports the common theme shown in previous studies. The role of occupational therapists in addressing the needs of this population is not yet clear, and the efficacy of intervention has not yet been determined, therefore future research should focus on identifying ways occupational therapists can help college musicians (Ackermann et al., 2011; Guptill & Golem, 2008; Guptill, 2011).

### **Limitations**

There are several limitations to the study. First, the study was conducted with a small and relatively homogenous sample from one music department; therefore, the results cannot be generalized to all college musicians at the site, at other colleges, universities, or conservatories. Second, the online survey was open for a relatively short period of time; the survey does not consider the various changes that can occur throughout a semester or school year that could influence participants to respond to the survey differently. For example, students may experience more PPRS before an evaluated performance or final exam, or less if they are beginning a new set of courses upon returning from a break or they had just completed a performance. Online, anonymous surveys leave room for participants to interpret the items differently since they could

not seek clarification. The survey asked participants to retrospectively report their stress levels over 2-3 months and 6-12 months, potentially decreasing the accuracy of responses.

Additionally, the rationale for how students rated the effectiveness of outside services is unclear. It is unknown whether they based it off firsthand experience with the services, what they have heard from others, or general opinions, and the specific purpose of seeking the services was not specified. Finally, because the participants self-selected to complete the survey, the findings may not fully capture the typical general population of college student musicians. For example, college musicians may have been more inclined to participate in the study if PPRS were relevant or applicable to them or if their time demands allowed for them to complete the survey.

### **Recommendations for Future Research**

Results from this study suggest there are a number of areas for future research, such as on the impact of year in school and gender on stress levels, and the ability to manage PPRS. Determining if and how the contributing factors, types of PPRS, and impact on occupational engagement may be differ between genders or number of years in school can help occupational therapists better understand and address their needs. The relationship of sleep with stress, psychosocial performance related symptoms, difficulty with occupational engagement, and management of symptoms could also be analyzed further. The affects of sleep on well-being has been well documented in the past; it may be valuable to better understand how this population in particular, who gets a lower than average 6-7 hours of sleep on a typical week night, is affected by lack of sleep. Additionally it may be of interest to investigate the different demands of various majors and instruments to determine if there is a relationship with any of the variables of interest. Understanding the requirements and demands of college musicians with different majors and instruments would likely result in occupational therapists being able to provide more client-

centered treatment and prevention. Qualitative research or focus groups with college musicians could provide more detailed information about individual experiences with PPRS and personal experiences with outside services, such as occupational therapy. We would gain from allowing this population to openly discuss what the current barriers may be for addressing their symptoms, and what they believe would be helpful in preventing PPRS or help lessen the impact they may have on their lives. Focus groups may benefit college musicians, because it may help them understand that they are not experiencing PPRS alone, and that their experiences are valid and should be addressed. Finally, research could be conducted on the immediate and long-term effects of different occupational therapy interventions with this population.

### **Conclusion**

The findings from this research study provide further evidence that college musicians are at risk for PPRS. They have needs that could potentially be addressed by occupational therapy practitioners as their PPRS are affecting their occupational engagement negatively. These issues highlight the importance of studying this population from an occupational therapy standpoint to better understand and address the needs of this group. Occupational therapy practitioners promote engagement in daily life activities that provide individuals with meaning and life satisfaction, and strive to prevent disability and disease. College student musicians are a unique population because any symptoms, whether physical or psychosocial, have the potential to have an impact on their roles and occupations. Playing music is a meaningful occupation for this population, and one participant eloquently stated, “while there are difficulties with practicing and performing, the rewards are much greater.” Future research can help occupational therapists to identify how we can best work with college musicians to ensure they may continue to pursue their passions.

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**Tables for Manuscript**

Table 1

*Frequency and Percent of Psychosocial Performance Related Symptoms*

Psychosocial performance related symptoms	Frequency	Percent (%)
Stress	118	83.1
Anxiety	94	66.2
Frustration	93	65.5
Dissatisfaction	84	59.2
Emotional Exhaustion	75	52.8
Performance Anxiety/Stage Fright	70	49.3
Fatigue	66	46.5
Muscle Strain/ Muscle Fatigue	65	45.8
Decreased Self Confidence	57	40.0
Fear	51	35.9
Depression	40	28.2
Altered Breathing	28	19.7
Rapid Heart Rate	27	19.0
Hopelessness	27	19.0
Headaches	26	18.3
Anger	25	17.6
Excessive Yawning	23	16.2
Chronic Cold Hands	20	14.1
Excessive Perspiration	15	10.6
Other	5	3.5

Table 2

*Multiple Regression Analyses: The Impact of Various Factors on College Musicians*

Variable	Psychosocial performance related symptoms			Difficulty with occupational engagement			Contributing factors			Management of psychosocial performance related symptoms		
	b	SE	β	b	SE	β	b	SE	β	b	SE	β
1 (Constant)	-1.65	1.77	-	2.82	1.85	-	2.32	2.04	-	7.56	0.94	-
Gender	2.49	0.67	0.29**	1.32	0.70	0.16	3.00	0.77	0.30**	-0.65	0.36	-0.15
Year	0.56	0.26	0.17*	0.20	0.27	0.06	0.58	0.30	0.16†	0.17	0.14	0.10
Class load	1.40	0.51	0.22**	1.35	0.53	0.22*	1.62	0.58	0.22**	-0.36	0.27	-0.11
2 (Constant)	-6.25	1.67	-	-2.21	1.70	-	2.52	1.98	-	9.52	0.93	-
Gender	2.11	0.59	0.24**	1.09	0.60	0.13	2.69	0.70	0.27**	-0.53	0.33	-0.13
Year	0.30	0.23	0.09	-0.01	0.23	0.00	0.35	0.27	0.09	0.27	0.13	0.17*
Class load	0.29	0.52	0.05	-0.37	0.53	-0.06	0.23	0.62	0.03	0.23	0.29	0.07
Stress level 2 weeks	0.63	0.18	0.29**	0.86	0.18	0.41**	0.64	0.21	0.26**	-0.30	0.10	-0.29
Stress level 2-3 months	0.18	0.20	0.09	0.41	0.21	0.20*	0.41	0.24	0.17†	-0.12	0.11	-0.11
Stress level 6-12 months	0.49	0.16	0.26**	0.20	0.17	0.11*	0.34	0.19	0.16†	-0.15	0.09	-0.16

Note. \*\* $p < .01$ , \* $p < .05$ , † $p < .10$

Table 3

*Correlation between PPRS and Occupational Engagement*

	Pearson correlation	Total psychosocial performance related symptoms
Difficulty engaging in physical sports or activities		.34**
Difficulty with music performance		.38**
Difficulty engaging in activities of interest outside of music		.33**
Difficulty engaging in academics		.30**
Pain/Discomfort		.34**
Fatigue		.42**
Weight Loss		.28**
Weight Gain		.36**
Difficulty engaging in social activities		.35**
Difficulty with motivation to get ready for the day ahead		.42**
Decreased interest in self hygiene		.26**
Decreased hours of sleep		.34**
Increased hours of sleep		-.08

*Note.* \*\*  $p < .01$

## Appendix A- Survey

### Performance Related Symptoms - Final Version

Q1 My name is Sophie Leeds, and I am a graduate Occupational Therapy student at Ithaca College. As part of my Individual Thesis Research I course (OTMS 67200-02), I am conducting a survey of Ithaca College music majors to gather information about their perceptions of their own psychosocial wellness. You are free to leave any questions blank and/or to stop filling out this survey at any time. The survey takes between 15-20 minutes to complete. This is an anonymous survey. If you choose to provide your email address to enter to win one of three \$25 iTunes gift cards, your email address will not be attached to the survey you have completed and I will not see the email addresses. In order to complete this survey, you must be 18 or older. Additionally, you must be a full time Ithaca College student with a major in the School of Music. Thank you for helping me with this project. Sophie Leeds, Ithaca College 2014, OTMS sleeds1@ithaca.edu

### Q2 Age

- 18 (1)
- 19 (2)
- 20 (3)
- 21 (4)
- 22 (5)
- 23 (6)
- 24+ (7)

### Q3 Gender

- Male (1)
- Female (2)

### Q4 Year in School

- Freshman (1)
- Sophomore (2)
- Junior (3)
- Senior (4)
- Graduate Student (5)

Q5 Transfer student?

- Yes (1)
- No (2)

Q6 Major Within Music School. Check all that apply.

- Composition B.M (1)
- Jazz Studies B.M (2)
- Music B.A (3)
- Music Education B.M (4)
- Music in Combination with Outside Field B.M (5)
- Performance B.M (6)
- Performance and Music Education B.M (7)
- Sound Recording Technology B.M (8)
- Theory B.M (9)
- Composition M.M (10)
- Conducting M.M (11)
- Music Education M.M, M.S (12)
- Performance M.M (13)
- Suzuki Pedagogy M.M (14)

Q7 What is your perception of your current class load this semester?

- Light Load (1)
- Moderate Load (2)
- Heavy Load (3)

Q8 Average number of hours in classes per week?

- Less than 12 (1)
- 12-15 (2)
- 16-19 (3)
- 20-23 (4)
- 24+ (5)

Q9 Average hours of musical practice outside class per week?

- 1-5 (1)
- 6-10 (2)

PSYCHOSOCIAL SYMPTOMS AND COLLEGE MUSICIANS 57

- 11-15 (3)
- 16-20 (4)
- 21-25 (5)
- 26-30 (6)
- 31+ (7)

Q10 Check off your primary, secondary, and hobby/leisure instruments. Check all that apply.

	Click to write Column 1		
	Primary (1)	Secondary (2)	Hobby/Leisure (ex. gigs, venues, personal enjoyment, music clubs on campus, etc.) (3)
Piano (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Guitar (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Percussion (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Violin (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Viola (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cello (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bass (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trumpet (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trombone (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
French Horn (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Euphonium (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tuba (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Baritone Horn (13)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Soprano Saxophone (14)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alto Saxophone (15)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tenor Saxophone (16)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Baritone Saxophone (17)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Flute (18)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clarinet (19)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bass Clarinet (20)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Voice (21)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q30 If your instrument is not listed above, please indicate your instrument here and state whether it is your primary, secondary, or hobby/leisure instrument.

Q11 Please indicate which, of any, of the following performance related symptoms you are currently experiencing. For the purposes of this study, the term “performance related symptoms” refers to: symptoms whose origins are related to, or are worsened by, the performing and practicing of musical instruments. Check all that apply.

- Anger (1)
- Anxiety (2)
- Depression (3)
- Frustration (4)
- Emotional Exhaustion (5)
- Stress (6)
- Dissatisfaction (7)
- Fear (8)
- Hopelessness (9)
- Decreased Self-confidence (10)
- Performance Anxiety/Stage Fright (11)
- Fatigue (12)
- Altered Breathing (13)
- Excessive Yawning (14)
- Chronic Cold Hands (15)
- Rapid Heart Rate (16)
- Headaches (17)
- Muscle Strain/Muscle Fatigue (18)
- Excessive Perspiration (19)
- Other (20)

Q12 Please feel free to use this space for additional comments

Q13 How do your performance related symptoms affect your everyday life? Check all that apply.

	Frequency		
	Never (1)	Sometimes (2)	Always (3)
Difficulty engaging in physical sports or activities (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Difficulty with music performance (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Difficulty engaging in activities of interest outside of music (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

PSYCHOSOCIAL SYMPTOMS AND COLLEGE MUSICIANS 59

Difficulty engaging in academics (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pain/Discomfort (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fatigue (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Weight Loss (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Weight Gain (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Difficulty engaging in social activities (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Difficulty with motivation to get ready for the day ahead (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Decreased interest in self hygiene (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increased hours of sleep (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Decreased hours of sleep (13)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (14)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q14 Please feel free to use this space for additional comments.

Q15 What factors contribute to your performance related symptoms? Check all that apply.

	Never (1)	Sometimes (2)	Always (3)
Time Demands (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Set Up of Practice Area (e.g. organization, comfort) (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Difficulty Finding/Scheduling Practice Space (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Difficulty of Tasks (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Competition Amongst Peers (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
External Pressure from Parents/Family (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
External Pressure from Professors (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Perfectionism (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

PSYCHOSOCIAL SYMPTOMS AND COLLEGE MUSICIANS 60

Personal Expectations for Success (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Performance Anxiety/Stage Fright (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Concerns about Future Career (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of Respect From Peers/Teachers/Family (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Financial Concerns (13)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (14)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q16 Please feel free to add additional comments.

Q17 How do you manage your performance related symptoms? Check all that apply.

	Days per week				
	0 Days/Week (1)	1-2 Days/Week (2)	3-4 Days/Week (3)	5-6 Days/Week (4)	Daily (5)
Sleep (1)	<input type="radio"/>				
Exercise (2)	<input type="radio"/>				
Read (3)	<input type="radio"/>				
Write in Journal (4)	<input type="radio"/>				
Draw (5)	<input type="radio"/>				
Listen to Music (6)	<input type="radio"/>				
Talk with Family/Friends (7)	<input type="radio"/>				
Talk with a Counselor (8)	<input type="radio"/>				
Alcohol/Recreational Drugs (9)	<input type="radio"/>				
Prescription/Over the Counter Medications (10)	<input type="radio"/>				
Spend time Alone (11)	<input type="radio"/>				
Other (12)	<input type="radio"/>				

Q18 Please feel free to add additional comments.

Q19 How well do you feel that you are able to manage your performance related symptoms?

\_\_\_\_\_ Not Well at All (0)    Very Well (10) (1)

Q20 Perceived level of stress within the past 2 weeks from 'None' to 'Very High'

- 0 (0)
- 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)
- 6 (6)
- 7 (7)
- 8 (8)
- 9 (9)
- 10 (10)

Q21 Perceived level of stress in the past 2-3 months from 'None' to 'Very High.'

- 0 (0)
- 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)
- 6 (6)
- 7 (7)
- 8 (8)
- 9 (9)
- 10 (10)

Q22 Perceived level of stress in the past 6-12 months, from 'None' to 'Very High'

- 0 (0)
- 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)
- 6 (6)

PSYCHOSOCIAL SYMPTOMS AND COLLEGE MUSICIANS 62

- 7 (7)
- 8 (8)
- 9 (9)
- 10 (10)

Q23 Average hours of sleep per weeknight.

- 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)
- 6 (6)
- 7 (7)
- 8 (8)
- 9 (9)
- 10 (10)
- 11 (11)
- 12 (12)
- 13+ (13)

Q24 If you have received any of the following services, please indicate whether they were effective or not effective. (Check all that apply.)

	Effective (1)	Not Effective (2)
Chiropractor (1)	<input type="radio"/>	<input type="radio"/>
Physical Therapy (2)	<input type="radio"/>	<input type="radio"/>
Occupational Therapy (3)	<input type="radio"/>	<input type="radio"/>
Yoga (4)	<input type="radio"/>	<input type="radio"/>
Osteopath (5)	<input type="radio"/>	<input type="radio"/>
Massage Therapy (6)	<input type="radio"/>	<input type="radio"/>
Psychologist (7)	<input type="radio"/>	<input type="radio"/>
Psychiatrist (8)	<input type="radio"/>	<input type="radio"/>
Counselor (9)	<input type="radio"/>	<input type="radio"/>
Life Coach (10)	<input type="radio"/>	<input type="radio"/>
Acupuncture (11)	<input type="radio"/>	<input type="radio"/>
Feldenkrais (12)	<input type="radio"/>	<input type="radio"/>
Other (13)	<input type="radio"/>	<input type="radio"/>

Q25 Please feel free to add additional comments.

Q26 What do you perceive as barriers to seeking outside treatment? (Check all that apply.)

- Stigma (1)
- Lack of Availability of Service(s) (2)
- Lack of Time (3)
- Lack of Money (4)
- Unsure Where to Seek Treatment (5)
- Unsure of What Treatments are Available (6)
- Unsure of What Treatments are Effective (7)
- Unsure of What Treatments are Recommended (8)
- Lack of Support from Peers/Family (9)
- Other (10)

Q27 Please feel free to use comment box below to share any additional comments.

Q28 Thank you for taking the time to complete this survey. I appreciate your input. After you submit this survey, you will be redirected to a new survey that will ask for your email address if you like to be considered for one of the three \$25 gift cards for iTunes. This will not be attached to your survey responses in any way, and you are not required to provide your email address.

**Appendix B: Human Subjects Proposal and Approval Letters**

*Please save and email copy to [hsrlog@ithaca.edu](mailto:hsrlog@ithaca.edu)*

**ALL-COLLEGE REVIEW BOARD FOR HUMAN SUBJECTS RESEARCH  
PROPOSAL**

**1. General Information:**

- a. Funding: A request of \$75 dollars has been granted for providing an incentive for completion of the survey. The \$75 dollars will be divided into three \$25 gift cards for iTunes. Participants of the study may choose to enter into the raffle upon completion of the survey to win one of three gift cards.
- b. If externally funded (federal or state funds), please list CITI certification date of ALL researchers: (Please note that the proposal will not go to committee without CITI certification): N/A
- c. Location: Ithaca College
- d. Time Period: October 2013- April 2014
- e. Expected Outcomes: I intend on submitting my manuscript to a peer reviewed occupational therapy or related journal. I will also submit a proposal to the next AOTA national conference in order to disseminate my findings. Additionally, I will share my findings with the Ithaca College Occupational Therapy Department and the Whalen School of Music.

**2. Related Experience of Researchers:**

The following courses I have taken while at Ithaca College have provided me with the knowledge and experience I have on conducting research, gathering data, and analyzing results: Research Methods In Occupational Therapy (OTBS 4600), Biostatistics (OTBS 3800), and Occupational Therapy Research Seminar (OTBS 46500). In Research Methods In Occupational Therapy, I wrote a research paper on the impact of physical strains experienced by college musicians. I learned how to properly gather and analyze research, and how to create my own statement based on my findings. In Occupational Therapy Research Seminar, I further refined my research ideas and received feedback from my professor. This research project is part of a 2 part graduate course titled Individual Thesis Research I and II.

Dr. Julie Dorsey is an occupational therapy professor who has been the primary investigator and thesis advisor for several group and individual research projects over her past 7 years as a faculty member at Ithaca College. Additionally, Dr. Dorsey has completed her own research projects.

**3. Benefits of the Study:**

Completion of this study will expand my knowledge in the occupational therapy field. The information I gather from my participants will help me gain an understanding of a population I will likely encounter in my career, and will contribute to my professional development. Furthermore, I will better understand the importance of addressing the impacts that occupational performance has on people and may learn ways to address these issues through

the input I receive from the participants of the study. My research will provide occupational therapy practitioners with scholarly information on a population that has not been explored extensively, which will contribute to the continuous progression of occupational therapy field. The participants of the study will be provided with the opportunity to anonymously express and voice the experiences they endure as a college aged musician. This may heighten their awareness of the importance of preventing and treating performance related symptoms. Lastly, music educators who see the study may be made more aware of the performance related symptoms that their students experience and its impact on their daily lives so as to provide preventative strategies and treatment strategies for their future students.

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#### **4. Description of Participants**

##### a. Number of participants:

According to the Ithaca College Facts in Brief 2012-2013, there are 529 undergraduate majors and 52 graduate majors in the school of music for a total of 581 majors. Data for 2013-2014 is not available, however it is estimated that there will be approximately the same number of eligible students for the study.

##### b. Salient Characteristics:

Participants must be full time undergraduate or graduate students at Ithaca College with a major within the Whalen School of Music. The students can play any instrument, including voice. Students must be between the ages of 18 and 23. Students who are out on leave (study abroad, medical, family, etc.) are not eligible to participate in the study.

#### **5. Description of Participation**

Students are asked to complete an online anonymous survey through Qualtrics that requires approximately 15-20 minutes to complete.

#### **6. Ethical Issues:**

##### a) Risks of Participation:

This study has the potential to elicit negative feelings and reactions in some participants. However, the questions are relatively neutral in content, it is anonymous, and participants have the option to not respond to questions.

##### b) Have you attached an Informed Consent Form or Tear-Off Cover Sheet for anonymous surveys?

Yes, see Tear-Off Sheet attached.

#### **7. Recruitment:**

##### a) Procedures

Anonymous online survey through Qualtrics distributed in the following ways:

Intercom: Emails to department heads asking them to share with their students.

Fliers posted in places frequented by students such as bulletin boards and hallways throughout the Whalen School of Music

Personal contacts: Student and faculty supervisor conducting the study will share the survey information with their campus connections.

Facebook: Student will post information on Facebook group pages for music classes, clubs, and organizations.

Student will visit classrooms to share survey information, with prior permission from the faculty members.

- b) Inducement to Participate/Extra Credit  
N/A

**8. Confidentiality/Anonymity:**

The survey will be conducted through Qualtrics and set up as anonymous, meaning there is no way to match participants with their responses. Survey questions will not ask any identifying information. A separate survey will be provided for students who wish to provide their email address in order to enter to win one of the three iTunes gift cards. This will ensure anonymity, as the email addresses of the participants will be separate from their survey responses. The research assistant will randomly select the 3 winners of the gift cards, so neither the researcher nor faculty advisor will see any of the email addresses.

**9. Debriefing:**

**10. Compensatory Follow-up:**

**Proposed Date of Implementation:**

October 11<sup>th</sup>, 2013

Signature of Principal Investigator:

Sophie E. Leeds

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*Electronically submitted protocols must be sent from an Ithaca College e-mail account. Original signatures are not required. Ithaca College e-mail IDs have been deemed by the College to constitute a legal signature.*

**PLEASE NOTE THAT YOUR PROPOSAL WILL BE DEEMED INCOMPLETE UNLESS COPIES OF ALL INSTRUMENTS TO BE USED (SURVEYS, ETC.) AND INFORMED CONSENT FORM (IF NECESSARY) ARE SENT TO [hsrlog@ithaca.edu](mailto:hsrlog@ithaca.edu).**

**Recruitment Materials**

**Tear Off Cover Sheet**

Impact of Performance Related Symptoms Experienced by College Student  
Musicians

My name is Sophie Leeds, and I am a graduate Occupational Therapy student at Ithaca College. As part of my Individual Thesis Research I course (OTMS 67200-02), I am conducting a survey of Ithaca College music majors to gather information about their perceptions of their own psychosocial wellness. You are free to leave any questions blank and/or to stop filling out this survey at any time.

This is an anonymous survey. If you choose to provide your email address to enter to win one of three \$25 iTunes gift cards, your email address will not be attached to the survey you have completed and I will not see the email addresses.

In order to complete this survey, you must be between the ages of 18 and 23 years old. Additionally, you must be a full time Ithaca College student with a major in the School of Music.

Thank you for helping me with this project.

Sophie Leeds  
Ithaca College 2014, OTMS  
[Sleeds1@ithaca.edu](mailto:Sleeds1@ithaca.edu)

**Intercom/Facebook:**

Title: "Calling all Ithaca College Music Majors"

Description: Hello! If you are a full time Ithaca College student with any music major within the Whalen School of Music, and you'd like a chance to enter to win a \$25 gift card for iTunes, then read on:

I am an IC graduate occupational therapy student, and fellow musician, who would like to learn more about your experiences as a music major at Ithaca College. Please help me out by filling out my online, anonymous survey about performance-related symptoms by following this link: \_\_\_\_\_. It takes approximately 15-20 minutes to complete and you are free to stop at any time.

Thank you in advance for your time, and if you have any questions, please contact my faculty advisor Dr. Julie Dorsey at [jdorsey@ithaca.edu](mailto:jdorsey@ithaca.edu)

**Emails to Department Heads**

Hello \_\_\_\_\_:

My name is Sophie Leeds, and I am a graduate occupational student at Ithaca College. I have been involved in the music school throughout my undergraduate years here through campus band, jazz band and jazz combo. I have a strong appreciation for everything that music majors are involved in during their time at IC and this has led me to the focus of my master's thesis project. For my research project, I'd like to learn more about college aged musicians from an occupational therapy perspective. The title of my study is "The Impact of Performance Related Symptoms Experienced by College Student Musicians".

I have created an online, anonymous survey that all full-time students in Whalen are eligible to complete. The survey looks at performance related symptoms and their impact on everyday life. It takes 15-20 minutes, and as an incentive, each student who completes the survey can enter for a chance to win 1 of 3 \$25 gift cards to iTunes. If you could please encourage your students to complete my survey, I would greatly appreciate it! I would also be happy to take a few minutes to talk to your students about my survey in one of your classes if that is of interest to you. Please let me know and we could set a time up to do that. I hope that the survey results will provide valuable information about the experiences of college student musicians and would be happy to share my results upon completion. If you have any questions, you may contact me at [sleeds1@ithaca.edu](mailto:sleeds1@ithaca.edu), or my thesis advisor, Dr. Julie Dorsey, at [jdorsey@ithaca.edu](mailto:jdorsey@ithaca.edu). Thank you in advance for your time!

Survey link:

Sincerely,  
Sophie Leeds  
Ithaca College BS 2013, MS 2014 Occupational Therapy

# **Calling ALL Music Students!**



**Would you like a chance to win a \$25 gift card to iTunes?**

**Complete an online, anonymous 15-20 minute survey that is part of an IC graduate occupational therapy student's master's thesis... *specifically* about your experiences!**

**Follow the link below, find the link on Intercom, the Facebook page, "Whalen Center For Music Ithaca College," or from emails from your professors.**

**Thank you in advance for your time!**

**Link: \_\_\_\_\_**

### **Stipulations Letter**

In order to expedite the review process, I am sending a copy of the letter with the stipulations that need to be addressed. You should receive the original shortly. If it is easier to email the corrected copy, please do so.

MaryAnn Taylor

Provost's Office

---

October 11, 2013

Sophie Leeds, Graduate Student

Department of Occupational Therapy

School of Health Sciences and Human Performance

### **Re: HSR #1013-08, The Impact of Performance Related Symptoms Experienced by College Aged Musicians**

The All-College Review Board for Human Subjects Research (HSR) has reviewed the above-named proposal and provided the following stipulations to be addressed:

#### Abstract

- The *Abstract* should be a summary of the *Proposal*. Explain what you will do, justify why, and what you expect to find.

#### Proposal

- Item 7 – Copies of all Recruitment Procedures need to be included (i.e., fliers, recruitment emails, Facebook posts, etc.)
- Item 8 – For the study to be anonymous, a web-page or a separate survey should be set up that is accessible at the end of the existing survey, where those who have completed can send a request. Otherwise, the email address is associated with the data and you would need to state throughout that the study is confidential, not anonymous.

#### Appendix A- Tear-Off Cover Sheet

- Include the total time to complete the Survey.

## PSYCHOSOCIAL SYMPTOMS AND COLLEGE MUSICIANS 71

Please submit the revised proposal for review to Sponsored Research, Office of the Provost and Vice President for Educational Affairs or email the revised proposal to [hsrlog@ithaca.edu](mailto:hsrlog@ithaca.edu). Upon final review, you will receive notification indicating that your study can commence.

Sincerely,

Wade Pickren, PhD

Director, Center for Faculty Excellence/Sponsored Research

All-College Review Board for Human Subjects Research

/mat

c: Julie Dorsey, Assistant Professor

**HSR Approval Letter**



**ITHACA COLLEGE**

Center for Faculty Excellence

October 16, 2013

Sophie Leeds, Graduate Student  
Department of Occupational Therapy  
School of Health Sciences and Human Performance

**Re: HSR #1013-08, The Impact of Performance Related Symptoms Experienced by College Aged Musicians**

Thank you for responding to the stipulations made on October 11, 2013 by the All-College Review Board for Human Subjects Research (HSR). You are authorized to begin your project.

This approval will remain in effect for a period of one year from the date of authorization. After you have finished the project (when data collection is complete and there is no further risk to human subjects), please complete the *Notice-of-Completion Form* found on the HSR website. Please note that review/approval of future proposals is contingent upon submission of this form.

Should you wish to continue the approved project beyond the expiration date, you may request an extension by sending an email to [hsrlog@ithaca.edu](mailto:hsrlog@ithaca.edu) before October 15, 2014. *If the project expires, you must complete a new application online for expedited review.* Also, if there are any adverse events that result from this research, they must be reported to the HSR Board at [hsrlog@ithaca.edu](mailto:hsrlog@ithaca.edu).

Sincerely,

A handwritten signature in cursive script that reads "Wade Pickren".

Wade Pickren, PhD  
Director, Center for Faculty Excellence/Sponsored Research  
All-College Review Board for Human Subjects Research

/mat

c: Julie Dorsey, Assistant Professor

## **Appendix C**

### **Author Guidelines for Occupational Therapy in Health Care**

Formatted for Microsoft Word from pdf, which can be found at <http://informahealthcare.com/userimages/ContentEditor/1382110226641/Instructions%20for%20Authors%20WOHC%20MC%20live.pdf>

#### **Instructions for Authors**

Manuscripts submitted to Occupational Therapy in Health Care (OTHC) should address topics relevant to occupational therapy practitioners and should address the latest clinical findings, evaluation and treatment implementation strategies, educational practices, literature reviews and practical information for occupational therapists. All editorial inquiries should be directed to the Editor. Submissions can be made in the form of Original Research, Case Reports, Systematic Reviews, Theoretical perspective and Special Communications.

OTHC considers all manuscripts on condition they are the property (copyright) of the submitting author(s) and that copyright will be transferred to the Publisher if the paper is accepted. OTHC considers all manuscripts on the strict condition that they have been submitted only to OTHC, that they have not been published already, nor are they under consideration for publication, nor in press elsewhere. Authors who fail to adhere to this condition will be charged all costs which the Publisher incurs, and their papers will not be published.

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### **Review Process**

Manuscripts submitted to OTHC undergo an anonymous review by three reviewers. The Journal has an Editorial Board, which are highly experienced reviewers who have been on the review panel for more than two years. At least one member of the Editorial Board reviews each manuscript. A more extensive Reviewer Panel is available for selection to review and external reviewers also invited to ensure an informed panel of reviewers for each manuscript.

### **Manuscript Submission**

Manuscripts should be submitted electronically via the journal's online submission and peer-review website, ScholarOne's Manuscript Central. One Microsoft Word file (.doc) should include the title page with identifying information. A second Microsoft Word file should include the manuscript (cover page, abstract, text, references). Tables or figures

should also be uploaded as separate documents. Authors should not include their names, telephone numbers, fax numbers or e-mail addresses inside the body of the manuscript or on any figures or tables. Any acknowledgements should not be included on the initially submitted document. All identifying information will be asked for during the submission process and will be kept confidential by the journal office. Submissions will be acknowledged via e-mail. Please allow 10-15 weeks for the review process.

### **Manuscript Preparation**

**Spacing:** Double-spaced, including endnotes and references.

**Font:** Times New Roman, 12 point.

**Margins:** Leave at least one inch margin on all four sides; set all notes as endnotes.

**Header:** A header on each page with abbreviated title and page number of total (e.g. pg 2 of 7).

**Spelling, Grammar and Punctuation:** Authors are responsible for preparing manuscript copy which is clearly written in acceptable, scholarly English and which contains no errors of spelling, grammar, or punctuation.

Please be sure to be consistent in the use of abbreviations, terminology, and in citing references, from one part of your paper to another. Check the accuracy of all arithmetic calculations, statistics, numerical data, text citations and references.

### **Title Page (uploaded as a separate MS Word file) should include:**

- A title that is concise and reflects the content of the manuscript
- The full name(s) of each author
- Mailing and email address of corresponding author (i.e., "Address correspondence to:")
- Acknowledgement of research support or other credit

**Manuscript:** Include the cover page, abstract, text and references as a separate Microsoft Word file.

**Cover Page:** Important - Submit a cover page with the manuscript, indicating only the title (this is used for anonymous refereeing).

**Abstract:** Approximately 100 words. Do not include authors' names and affiliations on the Abstract page.

**Keywords:** Below the Abstract provide 3-6 keywords for index purposes.

**Human Subjects/Ethics Approval:** Research manuscripts should include a statement in the Subjects/Participants subsection of the text verifying that the study was approved by a named human subjects/ethics committee and that all subjects/participants provided informed consent.

### **Manuscript Length**

Manuscripts should be approximately 5-20 typed pages double-spaced (excluding tables, figures and/or references).

### **Manuscript Style and References**

Citation in the text is by author and date e.g. (Dickerson, 2013). Where there are two authors only please include both names e.g. (Dickerson & Smith, 2013). Where there are three authors or more include the first author and then 'et al.', e.g. (Dickerson et al., 2013). Parenthetical references should be placed at the end of the sentence, before the full-stop, when a resource has been used.

## **Reference list**

### Journal article

Sullivan KJ, Knowlton BJ, & Dobkin BH (2002). Step training with body weight support: Effect of treadmill speed and practice paradigms on poststroke locomotor recovery. *Archives of Physical Medicine and Rehabilitation*, 83(5), 683-691.

### Chapter in a book

Kolobe HA & Taylor A. (2006). The environment of intervention. In: SK Campbell, DW Vander Linden, & RJ Palisano (Eds.), *Physical therapy for children* (pp. 909-932). St. Louis, MO: Saunders Elsevier.

When there are seven or more authors, abbreviate the seventh and subsequent authors to et al. The references should be double-spaced and in alphabetical order by the primary author's last name.

## **Tables and Figures**

Tables and figures (including legend, notes, and sources) should be no larger than 4 1/2 x 6 1/2 inches. Type within tables or figures should be no smaller than 8 point.

Tables and figures should be uploaded electronically as separate text files. Use only those illustrations that clarify and augment the text.

Tables and figures must be referred to in the text and numbered in order of their appearance. Each table and figure should have a complete, descriptive title; and each table column an appropriate heading.

Each table and/or figure must have a title that explains its purpose without reference to the text.

Please format graphs, figures etc. mindful that these will be reproduced in black and

white. The use of differing line types and symbols are more clearly distinguished by readers than subtle differences in colour and identical line and symbol types. Please see below for further details on colour figures.

Captions must be saved separately, as part of the file containing the complete text of the paper, and numbered correspondingly.

Digital files are recommended for highest quality reproduction and should follow these guidelines:

- 300 dpi or higher
- Sized to fit on journal page
- EPS, TIF or PSD format only

Specific permission for facial photographs of patients is required. A letter of consent must accompany the photographs of patients in which a possibility of identification exists.

It is not sufficient to cover the eyes to mask identity.

Please note that it is in the author's interest to provide the highest quality figure format possible. Please do not hesitate to contact our Production Department if you have any queries.

### **Colour figures**

Any figure submitted as a colour original will appear in colour in the journal's online edition free of charge and can be downloaded. Paper copy colour reproduction will only be considered on condition that authors contribute to the associated costs. Charges are: £500/US\$1030 for the first colour page and £250/US\$515 for each colour page after per article. Colour costs will be waived for invited Review Articles.

**Acknowledgements**

The scientific and material contributions of others to the work should be acknowledged, with their written permission. Any grant supports should be listed and permission for reproduction of published material acknowledged.

**Declaration of Interest**

It is the policy of all Informa Healthcare journals to adhere in principle to the Conflict of Interest policy recommended by the International Committee of Medical Journal Editors (ICMJE).

All authors must disclose any financial and personal relationships with other people or organisations that could inappropriately influence (bias) their work. It is the sole responsibility of authors to disclose any affiliation with any organisation with a financial interest, direct or indirect, in the subject matter or materials discussed in the manuscript (such as consultancies, employment, paid expert testimony, honoraria, speakers' bureaus, retainers, stock options or ownership, patents or patent applications or travel grants) that may affect the conduct or reporting of the work submitted. All sources of funding for research are to be explicitly stated. If uncertain as to what might be considered a potential conflict of interest, authors should err on the side of full disclosure.

All submissions to the journal must include full disclosure of all relationships that could be viewed as presenting a potential conflict of interest. If there are no conflicts of interest, authors should state that there are none. This must be stated at the point of submission (within the manuscript after the main text under a subheading "Declaration of interest" and, where available, within the appropriate field on the journal's Manuscript

Central site). This may be made available to reviewers and will appear in the published article at the discretion of the Editor or Publisher.

If no conflict is declared, the following statement will be attached to all articles:

**Declaration of interest:** The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

The intent of this policy is not to prevent authors with these relationships from publishing work, but rather to adopt transparency such that readers can make objective judgments on conclusions drawn.

### **Proofs**

The designated author for correspondence will receive an email that instructs them to respond to the proofs of the manuscript. This should be read carefully for errors and be completed within the time frame allocated. Authors will be asked to defray the expense of any major alterations to the proofs which are departures from the original manuscript.