

# Why Music Majors Pursue Music Despite the Risk of Playing-related Injuries

Anna Park, MSc (OT), Christine Guptill, MS (OT), and Thelma Sumsion, PhD, OT Reg (Ont)

Music is an occupation that has existed across cultures and societies for millennia. What music means and how it is used differ depending on the context of an individual's life. University music majors often pursue music as a future career goal, despite the fact that playing-related injuries are a significant risk for this population and could end their careers. The purpose of this study was to investigate why university music majors pursue music despite the risk of playing-related injuries. This qualitative study used a naturalistic approach and focus groups to collect data. Nine students participated in two focus group sessions. The data were transcribed verbatim and analyzed for themes. The results of the study indicate that both personal and environmental factors influence the participants' decision to continue to participate in music. Some students also were willing to play through pain, which is contrary to Maslow's theory of human needs, and many students experienced difficulties accessing desirable health care. Although an injury could terminate a student's ability to participate in music, the occupation of music itself transcended this danger. For several musicians, quitting was not a desirable option. These findings have clinical implications for health care workers with respect to modifying treatment to address musicians' specialized needs. Occupational therapists use a holistic and client-centered approach to care and offer interventions such as compensatory techniques, assistive devices, and methods of energy conservation that may facilitate continuing with this valued occupation. *Med Probl Perform Art* 2007; 22:89-96.

Music is a universal and timeless form of art; the enjoyment derived from music has existed for millennia and transcends all ages, races, cultures, and societies. Music is often considered a leisure activity, but for certain individuals, music is a means of livelihood or survival. In other words, music can be considered work and can be the primary activity comprising one's day.

While playing a musical instrument may be a source of passion, the demands of performance can be physically taxing on the human body. Atypical postures, fingerings, techniques, or embouchures, playing endurance, and the difficulties of advanced repertoire are only a few examples of how playing a musical instrument can challenge the abilities of even seasoned performers. With this comes the potential of acquiring a playing-related injury (PRI), defined as any musculoskeletal pain syndrome related to overuse.<sup>1</sup> Student musicians may be at risk of developing a PRI sec-

ondary to the physical demands related to playing their instruments.

Past and current research on the music student population has mainly focused on the epidemiology and physical aspects of playing-related injuries.<sup>1-11</sup> It is becoming more evident that a large majority of university musicians have or will experience playing-related injuries at some time during their careers.<sup>1,6,7,9</sup> A systematic review by Zaza<sup>1</sup> investigated the incidence and prevalence of playing-related musculoskeletal disorders in adult musicians and found that in the seven admissible studies explored, the prevalence of such disorders ranged from 39% to 87%. A study on college music students by Guptill and her colleagues<sup>6</sup> found that 87.7% of their participants had experienced a PRI at some time in their lives. Miller and colleagues<sup>9</sup> compared music students against non-musician controls and found that of the two groups, music students are more likely to report an upper-limb pain problem. Therefore, research indicates that PRIs are a real and powerful risk for this population. Interestingly, the field of medicine that focuses on PRI prevention is relatively new, despite the fact that these types of injuries have been known to exist for over a century.<sup>7</sup>

Suffering a PRI has many consequences and the potential to terminate the future goals of a developing musician. An important question to address therefore is why do music students pursue this occupation? As occupational therapists, the authors believe that health includes participating in occupations, which can be defined as any meaningful activities that occupy one's time.<sup>12</sup> Occupational therapists are concerned with people's "doing" and "being" as both a means to, and as indicators of, health.<sup>13</sup>

Occupational therapists sometimes use theoretical frameworks from other disciplines to contextualize inquiry in human occupation. In this study, Abraham Maslow's humanistic hierarchy of needs<sup>14</sup> was used to frame an investigation of the motivation of student musicians to continuing to play music despite the risk of PRI. In ascending order, the five levels in the hierarchy are:

1. Physiological needs
2. Safety/security needs
3. Belongingness and the need to love/be loved
4. Esteem (of self and others)
5. Self-actualization.<sup>14</sup>

The last need is the highest level of our essential human nature; it is the striving for health, identity or full individuality, truth, creativeness, and excellence.<sup>14</sup> According to Maslow,

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*At the time of study, Ms. Park was a candidate MSc(OT), Ms. Guptill was an occupational therapist and a doctoral candidate in Rehabilitation Sciences, and Dr. Sumsion was director of the School of Occupational Therapy at The University of Western Ontario, London, Ontario, Canada.*

*Address correspondence and reprint requests to: Ms. Anna Park, School of Occupational Therapy, Elborn College, The University of Western Ontario, 1201 Western Road, London, ON N6G 1H1, Canada. Tel 519-636-2848; fax 519-661-3894; email [apark27@uwo.ca](mailto:apark27@uwo.ca).*

lower level needs must be met to adequately satisfy the individual so that he or she can move onto the needs of the next level. If not, whichever need is lacking will dominate as the major influence in the individual's life until the need is met.<sup>15</sup>

Freedom from pain is categorized under the need for safety, and according to Maslow, pursuing a career in music is categorized as a higher-level need. If Maslow's theory is applicable to musicians, one might expect injured students to discontinue their involvement in music in order to avoid further pain. One might also expect, with such a high prevalence of injuries, that students would be frequent consumers of health care services. However, evidence thus far indicates that students have quite low rates of health care consultation.<sup>6</sup> One researcher's (C.G.) experience with student musicians suggests that they persist with music, despite this risk.

This study attempted to further the understanding of the reasons why music students engage in the occupation of music despite the risk of injuries. The study was designed to investigate the value and meaning of the occupation of music to music students and to explore why this particular occupation seems to transcend the fundamental instinct of avoidance of pain. The results may assist health professionals in understanding the complex consequences associated with PRIs and how they may affect musicians' lives.

## METHODS

A qualitative study using a naturalistic approach was conducted. The aim of this study was to understand the lived experience of student musicians, not from opinions and attitudes, but from the use of rich life-world descriptions.<sup>16</sup> The use of qualitative data is naturalistic in its approach because the researcher does not attempt to alter the natural-occurring phenomena of study while trying to understand it.<sup>17</sup> A naturalistic paradigm contends that multiple realities exist, and these realities are studied to produce some level of understanding (*verstehen*) and that the interaction between the researcher and participants is dynamic and inseparable.<sup>18</sup>

Focus groups were chosen as the means of collecting data in order to investigate the unique experiences and perspectives of individual students. Litoselli<sup>19</sup> states that focus groups are useful for "gaining information on participants' views, attitudes, beliefs, responses, motivations, and perceptions on a topic; 'why' people think or feel the way they do" (p. 18). Advantages for using focus groups are that they are more time-efficient than individual interviews and they offer a dynamic interplay between participants who can query each other and explain themselves to each other.<sup>20</sup>

This study was approved by the Health Sciences Research Ethics Board at the University of Western Ontario.

### Participants

Music students from a Canadian university were recruited to participate in one of three 2-hour focus group sessions. The primary researcher verbally advertised the study to participants at the beginning of ensemble

rehearsals. Participants had to be at least 18 yrs old and instrumental music majors. A goal of three groups of approximately six participants in each session was based on recommendations by Morgan and Scannell.<sup>21</sup> This goal theoretically allows the participants sufficient and equal opportunity to talk and provides a balance between an under-representation of ideas and theoretical saturation of data (where no new ideas are generated by conducting more focus groups). Also, the participants can be considered experts on the topic and the goal of the study was to hear detailed stories and personal accounts.

The primary researcher over-recruited participants in hopes of achieving a sufficient number of participants. However, some students who agreed to participate did not attend the final session, and therefore, only two focus groups were conducted. Nine participants were involved in the study with the following demographics. The group comprised four males and five females. Their ages ranged from 18 to 21 yrs, and the number of years playing their principal instrument ranged from 2.5 to 15 yrs. The principal instruments were strings and woodwinds.

### Data Collection

The two focus groups were held in an accessible classroom within the Faculty of Music on the university campus, following rehearsals in late January 2006. The sessions began with the principal investigator introducing the purpose of the study. The participants signed a consent form and completed a brief questionnaire to obtain background information regarding their musical history. The principal investigator prepared 12 questions and probes.

### Data Analysis

All of the data were transcribed verbatim. These transcripts were read by the primary researcher (A.P.) to obtain a generalized overview of the information and to understand it as a whole experience. Next, the information was organized into three main themes with related subthemes. Consensus between two researchers (A.P. and C.G.) and journaling throughout the research process (by A.P.) were used to achieve triangulation to ensure the trustworthiness of the data analysis.

## FINDINGS

Three overarching themes emerged from the data: perspectives on the occupation of music, perspectives on PRIs, and factors that influence student musicians to continue music despite the risk of a PRI. Several subthemes were found within these larger themes (Table 1).

### Perspectives on the Occupation of Music

The participants were asked open-ended questions about the role music played in their lives. The rich, experiential narratives provided a context for how the participants became

involved in music, the benefits of being involved in music, and what music meant to them personally.

#### *Experience with Music as Part of Academic Life*

Music was a part of the participants' past academic curriculum, allowing for the opportunity to discover talents and for music to become a part of their daily routine. This is illustrated by the following examples:

*My main influence was just high school. I picked up the double bass in high school, hoping I could get through on bass guitar at the time, and as I progressed I started to enjoy it more and more. And by grades 12 and 13, that was kind of all I did in high school, so it seemed like a natural progression to continue my education in post secondary too. (Participant 1)*

*Well to be honest I never thought, when I went to my arts high school, that I would continue through university. . . . I guess it did just kinda flowed, like, in grade 12, I couldn't imagine not having music in my life everyday because it had been for like, 7 years. (Participant 3)*

#### *Social Aspect of Music*

Musicians were positively described as being cliques, family, and even cult-like due to shared feelings of compatibility, support, belongingness, and acceptance. Fellow musicians, in addition to being peers, were sometimes considered lifelong social supports. Two participants reported:

*In grade 6 when you take the music courses, it just seems that, uh, a sense of community is built and you're with the people for hours, like every single day. And you . . . want to attain the same goal and if, if one section has an epiphany, then the whole . . . ensemble has an epiphany, a sort of "Wow, it sounds like that, we can definitely do, we can make it sound like that." (Participant 2)*

*The people I met here, the people I hang out with on a daily basis, are almost, not exclusively, but very heavily, heavily in music, and they're the kind of people I can relate to and continue, you know, hanging out with for the rest of my life. (Participant 1)*

#### *Music as a Future Career Goal*

All participants identified music as being involved in their future career goals. This included teaching, performing, and further academic ambitions:

*I'm planning to go into education. . . . I really want to do high school teaching. . . . I'd have to be in music, like, I don't know what else there would be . . . it's just one of those things where I'm going to be doing it until like, I die. (Participant 9)*

*I'm a composition major so grad school for composition is an option. But I'm also a very avid jazz fan, and another option is pursuing a career in jazz performance, which would involve probably possibly another undergrad and then a grad program after that. (Participant 1)*

#### *The Meaning of Music is Different for Everyone*

How music was defined and what it meant to each individual differed among the participants. Music could also mean different things to one individual, as expressed by the following participants:

**TABLE 1. Main Themes Emerging from Focus Group Discussions with Student Musicians**

<p>Perspectives on the occupation of music</p> <ul style="list-style-type: none"> <li>Experience with music as part of academic life</li> <li>Social aspect of music</li> <li>Music as a future career goal</li> <li>The meaning of music is different for everyone</li> <li>Music as part of one's identity</li> </ul> <p>Perspectives on PRIs</p> <ul style="list-style-type: none"> <li>Individual and peer experiences of tendinitis and pain</li> <li>PRIs are common among musicians</li> <li>PRIs require time off from playing</li> <li>PRIs have "music-specific" consequences</li> <li>PRIs have a controllable aspect</li> <li>Difficulties accessing desirable health care</li> <li>Health care workers' unfamiliarity with musicians</li> <li>Social aspect of a PRI</li> </ul> <p>Factors that influence student musicians to continue music despite the risk of a PRI</p> <ul style="list-style-type: none"> <li>PRIs have an uncontrollable aspect</li> <li>Coping mechanisms during performance rest</li> <li>Music is my passion or love</li> <li>Challenging Maslow's theory</li> </ul>
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*It changes for me, like, you know, as soon as I wake up in the morning, music is the song that woke me up and then you know, on my way to school, music is whatever is in my CD player, and once I get here, music is double bass as I practice and then music is orchestra-orchestral music when I go to orchestra. . . . It changes by the minute depending on what kind of situation you're in. (Participant 1)*

*I think that music feeds the soul, helps the mind and relaxes and basically makes you more intelligent. I guess in a way . . . um, it's just really helpful when you're stressed and when you're sad or happy, it's just, it's there for you, it's a good thing. (Participant 4)*

#### *Music as Part of One's Identity*

Students stated that music provided them with a sense of self-worth and identity. Statements such as "It's [music] just part of who you are," "It's what you do," and "This is who I am, it defines me" were supported with fervent agreements among both focus group participants.

#### **Perspectives on Playing-Related Injuries**

Questions were posed during the focus group sessions to elicit students' perspectives on PRIs. Again, both personal and peer experiences were shared, revealing how PRIs affect the lives of musicians and their use of time, preventive techniques they use to avoid acquiring a PRI, and their level of satisfaction with health care.

#### *Individual and Peer Experiences of Tendinitis and Pain*

When asked what the students thought of when hearing the words *playing-related injury*, the immediate responses were personal and peer experiences of tendinitis and pain. Interestingly, many participants named the same few students who

were experiencing a PRI; this may support the aforementioned closeness among musician circles. Two participants provided the following examples of experiences of tendinitis and pain:

*It's just something you didn't factor into the equation . . . and it just happened one day where I woke up and my arms felt funny and I went and had a full day of rehearsals again, 4 hours, 5 hours of playing, and by the end of the night, my arms just hurt, and I went to the doctor later that week and I had tendinitis. So it, it creeps up on you, it knocks you down a couple of notches. Um, you can't play, your technique falls apart . . . and now you defer your juries, you can't play in rehearsals. (Participant 6)*

*Um, sometimes like, you know, when you wake up in the morning, I couldn't, like, put on my socks. I couldn't just like, bend over and or anything like that. . . . It hurts when you walk . . . basically when you're doing anything with your back, like lifting anything, it hurts. (Participant 2)*

### *PRIs are Common among Musicians*

Interestingly, some participants believed that it was common knowledge that most musicians would get a PRI at some point in their career. Participant 1 simply stated, "Everybody knows that you're going to get injured or that the risk of injury is really high." This apparently shared opinion appeared to normalize the injury risk.

*Some days you're okay with it because you just know you're hurt, it happens to almost everyone. Almost everyone I know that's in an upper year university, most of the performance majors, or, a lot of, like, most performers, rather, go through some sort of playing-related injury, um, whether in their undergrad or in their masters. (Participant 6)*

### *PRIs Require Time Off from Playing*

A frequent theme that arose when describing individual and peer experiences with PRIs was the idea of a "rest break" from playing. Examples of this include the following:

*I had to take . . . 2 months almost completely off the instrument. I was playing, maybe 6 hours a month, maybe? That's, that's down from like 6 hours a day, 5 days a week . . . 4 or 5 days a week . . . so that was a bit of a drastic change. (Participant 6)*

*I know when I got my wisdom tooth removed a few years ago, I couldn't play for about a month after because [they] had to break my jaw to get to them and for that entire month, I couldn't even listen to the bassoon concertos. . . . I don't know what I would do if I had an injury, um, that I wouldn't be able to get back to it, just because there's . . . there's nothing more to me. (Participant 7)*

### *PRIs Have "Music-Specific" Consequences*

Musculoskeletal pain for a non-musician may or may not have significant academic or life consequences. However, because performance is a mandatory component of a student musician's curriculum, a PRI is a serious threat with respect to delaying or terminating academic progress.

*Oh my God, I can't get injured. If I get injured, I'm going to have to lose my jury and so on and so forth. . . . For everybody else [non-musicians],*

*if you get injured...you have to get a cast or something and you're okay, you can go to class and learn. But for us, it's like, if I have an injury or whatever, I can't play . . . and if it's a playing-related one, you're, like, "If I go back to playing, it's going to make it worse." (Participant 7)*

*He wasn't able to play last year, uh, he's, I don't know if he sought treatment but he was really disappointed with that. You have to do, like, your performance jury, you have to do your recital, and he wasn't able to do it last year. (Participant 2)*

### *PRIs Have a Controllable Aspect*

Several students also reported that they feel that they can take an active role in the prevention of PRIs. They monitor their own actions in order to prevent PRIs. However, almost none of the participants had attended any prevention sessions offered by the university.

Preventive techniques included taking breaks, avoiding overuse of their hands during the day, using assistive devices (i.e., a harness to reduce the weight of a neck-strap), and performing warm-ups. Participant 4 reported that following advice from his teacher has helped prevent a PRI: "If you take the proper precautions, um, you can, uh, avoid some of those injuries. . . . I just follow what my teacher says and I haven't gotten anything yet."

Preventive techniques involved not only monitoring performance-related stressors but also everyday activities or using an assistive device:

*I find now that I have to, at work, I have to say I can't lift things for more than a certain amount of time and make sure my practicing is, like, spaced out, with me doing other things that aren't involving my hands . . . things like that, just so it won't come back or get any worse or anything. . . . It takes a lot of concentration to make sure you're not overusing your arms and stuff. (Participant 5)*

*Well I mean, I've had back problems even before I started playing, before I switched to bassoon . . . but ever since I started playing the instrument, I kind of noticed it getting worse. . . . I've talked to my teacher and he said, "Well you might want to consider maybe that it is the instrument." . . . I've gone and bought a harness which takes the weight off that shoulder, and ever since I've done that, it's so much better. I can play the instrument longer without even pain. (Participant 9)*

### *Difficulties Accessing Desirable Health Care*

The participants stated that they found health care services difficult to attain due to insufficient access to health care workers, a lack of time and finances, and the inconvenience of attending health care appointments.

*My family doctor is at the hospital . . . and she does, uh, practice there, I guess. So [there are] a lot of the [university] med students, um, I guess through their internships or whatever you call it, so a lot of the time I don't get her, I get somebody else. And it's always harder to like, just talk about your life with someone you just met. (Participant 3)*

*My family's health plan covers 80% but only so many hours, so I haven't gone to see the massage therapist . . . for probably a month—just because I, after I use up two more sessions, then I don't have anymore 'til March. so I'm just going to wait until it really flares up and I can't stand it, then I'll make an appointment. . . . I don't really feel a need to go to the hospital, you know, it just takes time out of your day and it's kind of a hassle. (Participant 2)*

The participants found that health care workers were unfamiliar with the needs of musicians. Students stated that having a health professional who understood the needs of being a musician would be beneficial to their treatment:

*Well, I just told my doctor, um, I'm a musician, I go to university for music . . . it's a lot of repetitive movements, and he's like, "Ok." He, he didn't really seem to, like, know a lot about it. . . . He said, "Ok, does it hurt?" I'm like "Yea." He's like, "Well, do you have to keep playing?" I'm like, "Yup." And he's like, "Ok, well, what do you want me to do?" I'm like, "Oh, I wouldn't mind having massage therapy or something like that," and he was like, "Ok." So he just signed the sheet. (Participant 2)*

*Well I definitely think having somebody who actually understands what you're doing and why you're doing it, um, would help a lot. . . . Like, you know, someone will say, "Well, stop playing," and . . . I can't do that because this is what I do. So at least they [health professionals who are familiar with PRIs] can help you, they have that understanding and they, they'll . . . say, "Well, you know, try doing this technique so that you can at least go longer" rather than, than not doing it at all. (Participant 9)*

#### Social Aspect of a PRI

Playing an instrument is not always a solo event, and musicians are often involved in groups or ensembles. These ensemble members, conductors, and teachers may have expectations in terms of the amount of time, commitment, and contribution of a musician, which may conflict with the student's health care needs. Although peer musicians have been discussed as a social support, some students avoid discussing pain or discomfort with their peers. This is illustrated in the following examples:

*I have to balance that with my playing obligations because I still have 8 hours a week . . . 10 hours a week of rehearsals that I owe people. I mean, in one or another...you have to deal with the other players because I'm in a chamber group, I'm in an orchestra, I'm in an early music ensemble. . . . I mean, that affects those people as well, so trying to deal with all of those different situations and . . . how much you give some, another group compared to another one? So, say I can practice an hour and a half a day, I mean I should be practicing an hour and a half just for myself; but if I have 3 hours of rehearsal . . . you can't just not play. (Participant 6)*

When asked if PRIs are part of the student musicians' conversation, something they share, one participant responded:

*I dunno, it kind of depends, I don't like to share it . . . it's just, maybe if I don't tell anybody, maybe it will go away. . . . So I don't, but I know that [another student musician], like, everybody will ask him, like, "Are you doing any better? Can you play again?" And I guess that I'd find that annoying. (Participant 8)*

#### Factors that Influence Student Musicians to Continue Music Despite the Risk of a PRI

After discussing the meaning of music and the meaning and impact of PRIs, the participants were asked to combine these two perspectives and delve into the reasons why they continue participating in music.

Although the participants acknowledged that they play a role in injury prevention, they also argued that there is an uncontrollable aspect to a PRI. Some factors are "out of their hands," such as demanding or advanced repertoire, anatomical factors that may lead to increased susceptibility to a PRI, and even abstract factors such as fate. This belief is supported by the following quotes:

*I don't really think that you can control it, I mean, especially if you're not doing anything wrong, like, it just happens. . . . You could be doing ev-everything right, you can take practice breaks, do all your stretches, and you can still get something. . . . That, that really sucks because . . . it was an act of God. . . . There's just nothing you can do, sometimes you just get injured; it's like, that's life. (Participant 2)*

*Like athletes, they do their stretches and stuff and they try and prevent it, but still, every once in a while, somebody gets knocked down on the basketball court and bashes their knee and they can't play anymore, for however long they can't play. (Participant 5)*

#### Coping Mechanisms during Performance Rest

Two participants noted that there are ways in which a musician can still participate in music without playing:

*For me, I got to start singing again, because that's all I could do for some of my rehearsals, was sing my part. . . . Um, and then now it's a matter of getting my technique back together. . . . Um, so I sit there and I practice my C major scales, and that's all I can do right now for my practicing. (Participant 6)*

*You can still practice without physically doing it, like you can go over the rhythms, you can tap them out, you can sing your part, you can listen to recordings of your piece, you can, like, get to know the piano parts and how they're going to have to do it, you can do like, theory and break it down. . . . There's a lot of different things you can do just besides per, performing, and playing the piece, that will help you as a musician, to understand the piece better. (Participant 2)*

#### Music is My Passion or Love

This subtheme recurred throughout both focus group sessions, which indicates that this love and passion push students to continue participating in music, despite injuries and/or the risk of acquiring one. Participants stated that this passion is lifelong and it is the most significant influence on their decision to continue with playing music:

*You know, I'll cut down . . . I'll even consider changing my career...but I'm not going to stop playing. . . . If an injury ends my career, then that's unfortunate, but nothing's going to end my love for music. (Participant 1)*

*I'm happy with doing what I'm doing and I have no regrets in that sense . . . do what you do, be happy with what you're doing and just as long as you can say yes I love what I'm doing, I'm passionate about it, this is what I want to do, it shouldn't be about money, it shouldn't be about injuries. (Participant 7)*

#### Challenging Maslow's Theory

The participants discussed that there are times in which they tolerate or "play through" pain for short-term goals, such

as completing a practice session. They also “play through” pain in order to fulfill their passion for music.

*I know that [to stop playing] is the right thing to do, but a lot of times when I practice, even if my hand's hurting, I'm just like, "I can get this run," like, I just . . . don't, like, let myself stop, and . . . I'm frustrated and want to get to where I want to be. . . . Sometimes I just . . . put it in the back of my mind. (Participant 3)*

*I . . . almost had tendinitis . . . I mean, I still have pain there whenever I play, whenever I just do stuff, but I kind of just ignore it. . . . It doesn't hurt that much, like it does hurt, like, okay, yea it does hurt, but I'm just willing to, you know, just brush it off, because there's, there's gonna be pros and cons to anything that you do and this, like, . . . the pros far outweigh the cons. (Participant 2)*

The same participant also stated:

*I have a recital coming up, it's like, I'll practice really, really hard, it doesn't even matter about anything else. . . . After, you can have time to rest, but you just keep practicing and you know that the pain will go away after the recital, you just practice through the pain. (Participant 2)*

In addition, students challenged Maslow's theory by addressing the potential financial limitations of a career in music:

*If you're going to try to pursue music, you have to put your passion and happiness above those things [vocational benefits such as money and security]. . . . The day I'm on the street playing for change, you know, maybe I'll rethink my career but, um, if I can have a house and support myself or whatever, then the joy I'll get out of playing music will be enough to cover the fact that I don't have a bigger house, or, you know, a wide screen TV or whatever. (Participant 1)*

## DISCUSSION

PRIs were acknowledged to be a significant risk to the potential careers of students who participated in this study. However, this risk did not stop participants from pursuing what they loved, and several stated that they expected to be involved in music for the rest of their lives. These findings confirm the results in a study by Chen and Howard,<sup>22</sup> who found that enjoyment was the dominant reason for continuing to play an instrument and that nearly all of their participants hoped to continue playing their instrument throughout their lives.

Several students referred to the social aspect of music as a major factor in their decision to continue. Occupations and the social environment have a dynamic relationship in that occupations can provide a context in which social interaction can take place,<sup>23</sup> and, in turn, social relationships can influence how individuals view themselves, bring meaning to life, and connect individuals to their environment.<sup>23</sup> In this study, it was found that the social environment can have both a negative and a positive influence on the participants' decision to continue music. Negative influences include feelings of obligation toward ensemble members and conductors. Peer support and injury rehabilitation advice were positive influences on participants' decisions to continue music.

Long-term performance rest is not a viable treatment option for this population, as demonstrated by their willingness to play through pain, although rest can be a component of the treatment plan. These results confirm those of Haglund and Jacobs,<sup>7</sup> who found that 79% of their sample felt that playing through pain was acceptable in overcoming technical difficulties. This challenges Maslow's belief that lower needs must be met prior to attaining higher needs—for these students, the love of music and their goals of continuing to pursue music as a career transcend their resignation to a potential threat. A study by Britsch<sup>24</sup> found that 35% of his subjects, youth orchestra members (aged 9 to 15), believed that it is acceptable to play with pain, indicating that this idea can become ingrained much earlier than at the university level.

Finally, the results indicate that both controllable and uncontrollable aspects of PRIs influence musicians. Although several students noted that educational programs on injury prevention were available and potentially useful, almost none of them had attended these sessions. Students also mentioned that they believed PRIs were common among musicians. Effective PRI management and improved program attendance may require making these courses mandatory or offering them in the curriculum, including students who are experiencing or have recovered from a PRI as well as health professionals in the program and offering specialized injury prevention sessions to music teachers.

Some participants explained that they had experienced difficulties accessing health care and that there was a limited understanding of their needs by health professionals. These factors may discourage a student musician from accessing help from professionals and lead them to turn to peers or music teachers for health care advice. They also may delay seeking help promptly, which may lead to chronic conditions that are often more difficult to treat. Therefore, the results of this study indicate that music is a valuable and meaningful occupation for these participants and that several personal and environmental factors facilitated their continued participation.

A strength of this study is that the open-ended means of data collection allowed the researcher to obtain information rich in personal experiences and views. Also, both the primary (A.P.) and secondary (C.G.) researchers are musicians, which allowed a deeper understanding of the needs and issues of the participants. C.G. has also had experience with this type of study and analysis.

A limitation of this study is that the naturalistic inquiry approach, small sample size, and narrow variety of principal instruments preclude generalization to other groups of musicians (e.g., students in other schools or geographic areas, pianists and vocalists, or professional musicians). Also, emotional pain (e.g., experiencing loss associated with being unable to play) and psychological pain (e.g., as a result of performance anxiety) were neither the focus of the study nor were they mentioned by the participants. Further research incorporating questions specifically directed at these aspects of musician's health would contribute to a more in-depth understanding of the experiences of injured musicians.

“Theoretical saturation” is obtained when the group responses begin to become repetitive and no new information is gathered from holding more sessions. While several identical subthemes were found across the two focus groups, a broader spectrum of perspectives may have been obtained had a third focus group taken place.

### Implications for Health Care

The findings of this study suggest that the participants’ passion and love for music may push them to play with pain. Health care practitioners should be prepared to educate musicians about the risks involved in playing with pain and to collaborate with them in planning treatment that takes into account the drive to continue performing.

The way in which the participants spoke about their involvement in music corresponds with the key features of the Canadian Association of Occupational Therapists (CAOT) definition of occupation:<sup>12</sup> occupations are everything people do to occupy themselves, including self-care, leisure, and productivity. For example, participants in this study indicated that engaging in music is a means of organizing time, generates income, provides a sense of purpose, is used as a therapeutic medium, is a source of meaning, and is a way to define oneself.

The results of this study also reveal that the impact of PRIs is not linear and does not only affect participation in music—a PRI can affect all components of a musician’s life. As one participant stated, back pain secondary to a PRI affected his ability to perform self-care activities. A PRI can disrupt all of the ways in which a student uses or depends on music. Therefore, a PRI may create the need to reorganize daily routines, lead to loss of income and sense of purpose, change what music means to the individual, and change how the musician defines him- or herself.

As mentioned in the results, PRIs can result in a loss of functional abilities, such as putting on one’s socks. One of the primary goals of occupational therapy is to improve an individual’s functional abilities. Occupational therapists are able to make suggestions regarding compensatory techniques, assistive devices, and methods of energy conservation that may facilitate longer opportunities to play. They also have insight into the ways in which a PRI can affect the non-music-related daily activities that can aggravate the musician.

The participants expressed the need for a holistic approach to care, which would consider their participation not only in music but also in other daily occupations and in their roles as students. Participants also expressed a need for individualized treatment that considers students’ self-identity as musicians and the important, individualized role music plays in their lives. This reiterates the importance for health care workers to adopt two approaches to treatment: a holistic focus and client-centered (or patient-centered) approach to care.

Occupational therapists undertake both these approaches to client care. The CAOT defines holistic practice as attending to all parts of the individual client in conjunction with his or her social relationships and the environment.<sup>12</sup> Client-

centered practice is defined as recognizing and respecting a client’s individuality, basing health care practice on the client’s values, meaning, and choice and encouraging the client to actively participate in planning therapy.<sup>12</sup> Although Hagglund and Jacobs<sup>7</sup> suggest that the unique needs of individual musicians make it difficult to prescribe an “ultimate” therapy, it is reasonable to suggest that, with a professional commitment to these two principles, occupational therapists can form an essential component of musician health care.

The study findings also speak to health professionals as a whole. Musicians’ needs are complex and multifaceted, and it is expected that occupational therapists would be one part of an interdisciplinary health care team that would work collaboratively to ensure that consideration is given to all aspects of the musicians’ lives (functional, physical, emotional, social, and psychological).

### CONCLUSIONS

The findings of this study contribute to the growing literature on the unique needs of student musicians and the benefits to be realized if health professionals gain further knowledge about PRIs. Rehabilitation planning requires a close partnership between the health professional and client. The results of this study suggest that programs of early preventive education may be effective in reducing PRIs in this population.

The participants of this study indicated a desire for a holistic and client-centered approach to health care, which can be addressed by health professionals involved in the care of musicians. Occupational therapists use these basic principles when planning and implementing treatment and can therefore play an important role in the treatment of musicians. By providing interventions such as compensatory techniques, assistive devices, and methods of energy conservation, occupational therapy may allow musicians to continue participating in their valued occupation despite acquiring a PRI.

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