and social supports of injecting drug users and their implications for HIV/AIDS services. *AIDS Care*, 5(1), 23–33.

Taylor, S. E. (1989). *Positive illusions: Creative self-deception and the healthy mind*. New York: Basic Books.

Van Manen, M. (1990). *Researching lived experience*. Althouse Press: University of Alberta.

Wheeler, B. L. (Ed.). (1995). *Music therapy research: Quantitative and qualitative perspectives*. Phoenixville, PA: Barcelona Publishers.

White, M. (1995). *Re-authoring lives: Interviews and essays*. Adelaide, S. Australia: Dulwich Centre Publications.

Whynot, E. (1996). *Health impact of injection drug use and HIV in Vancouver*. Victoria, BC: Office of the Provincial Health Officer, Ministry of Health.

Woolfolk, R. L. (1998). *The cure of souls: Science, values, and psychotherapy*. San Francisco: Jossey-Bass.

The Effects of Listening to Recorded Percussion Music on Well-being: A Pilot Study

Les effets de l'écoute de musique de percussion enregistrée sur le bien-être : une étude pilote

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Abstract

There has been a shift in the healthcare field over the past decades encouraging individuals to focus on wellness and prevention of illness. This has created a large market for recorded music with a wide range of purposes, which includes facilitating relaxation, altering mood, or increasing an individual's energy level, among others. This pilot study examined whether intentional recorded wellness music (i.e., music that has been composed and recorded with the intent of evoking a specific wellness-effect in the listener) can change the mood, level of relaxation, energy level, or focus of the listener, while also exploring listeners' ability to identify the composer's intent behind the music. Using a pre/post test questionnaire and three 30–second selections of recorded percussion music, 208 undergraduate students voluntarily participated in this study. Results indicated that the music excerpts did have a significant effect on participants' moods as well as their levels of relaxation, energy, and focus. Twenty percent of participants correctly identified the *Clarity (focus)* excerpt, forty-five percent correctly identified *Serenity (calm)*, and twenty-eight percent correctly identified *Vitality (energy)*. Future investigations and implications for music therapy practice will be discussed.

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Key words: wellness, music listening, percussion music, music therapy, mood, relaxation

Résumé

On observe au cours de la dernière décennie une tendance en soins de santé qui encourage les personnes à favoriser leur bien-être personnel ainsi que la prévention des maladies. Cette tendance a créé un vaste segment de marché de musique enregistrée présentant une diversité d'objectifs, entre autres faciliter la relaxation, modifier l'humeur et même améliorer le niveau d'énergie de la personne. Cette étude pilote a examiné si la musique enregistrée peut vraiment favoriser le bien-être (c'est-à-dire la musique composée et enregistrée dans l'intention de provoquer un effet particulier de bien-être chez l'auditeur), si elle peut modifier l'humeur, le niveau de relaxation, le niveau d'énergie ou le degré de concentration de l'auditeur et si l'auditeur peut identifier l'intention du compositeur derrière la musique. Deux cent huit étudiants de premier cycle ont participé volontairement à cette étude en remplissant un questionnaire avant et après les séances d'écoute, lesquelles comprenaient trois extraits de musique de percussion enregistrée de trente secondes chacune. Les résultats indiquent que les extraits de musique ont eu un effet significatif sur l'humeur des participants ainsi que sur leur niveau de relaxation, d'énergie et de concentration. Vingt pour cent des participants ont identifié correctement les extraits favorisant la *Clarté d'esprit (concentration)*, quarante-cinq pour cent, les extraits favorisant la *Sérénité (calme)*, et vingt-huit pour cent, les extraits favorisant la *Vitalité (énergie)*. Les recherches pour le futur et les conséquences pour la musicothérapie seront discutées.

Mots clés : bien-être, écoute musicale, musique de percussion, musicothérapie, humeur, relaxation

Health and Wellness Trends

There has been a steady change of focus in the healthcare field encouraging individuals to take responsibility for their own well-being. The trend in healthcare clearly leans toward prevention of illnesses and practicing healthy life-styles instead of treatment of illness and disease. Sixty years ago the World Health Organization (WHO) defined health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (WHO, 1947) and wellness as "the optimal state of health of individuals and groups" (Smith, Tang, & Nutbeam, 2006). Early pioneers in the wellness movement described wellness as a balance between body, mind and spirit (e.g., Dunn, 1959). Throughout the years, additional dimensions have been proposed. Though the number of dimensions on wellness varies, experts agree that wellness is a component of human health and encompasses the following five dimensions: physical, social, intellectual, emotional (mental), and spiritual (President's Council on Physical Fitness and Sports, 2001). The current wellness model focuses on increasing quality of life, preventing or lessening impact of chronic stress-related diseases, and reducing risk of hospitalized treatments (Ghetti, Hama, & Woolrich, 2004). Wellness is seen as an active process through which the individual becomes aware of, and makes conscious decisions towards, a healthier lifestyle and sense of well-being (National Wellness Institute, n.d.). To improve wellness, the field of complementary and alternative medicine provides wellness programs such as biologically based therapy (e.g., fasting and diets), manipulated and body-based methods (e.g., massage therapy and acupressure), exercise-based therapy (e.g., aerobics and Feldenkreis methods), and mind-body intervention (e.g., meditation and yoga) among others (Wikipedia, 2007). In addition, the term "wellness" is being used by numerous entrepreneurs, offering products or programs that promise to enhance well being in catalogues and on the internet. Whether or not the techniques and products actually improve individual's well being is subject of great debate, as research investigations are limited and reliable methods of assessing all dimensions of wellness are still missing (President's Council on Physical Fitness and Sports, 2001).

Music Therapy in Healthcare

Research has shown that music therapy can play a vital part in improving health and wellness. For many years, it has been utilized as an effective and valid treatment option in medical settings such as the ICU, Neonatal ICU (NICU), Pre- and Post-Op, medical and dental surgery, chronic pain management, and pediatrics (Standley, 2000). Systematically controlled studies have provided support for music listening as a method of reducing anxiety and stress related to medical procedures (e.g., Biley, 2000; Clark, Isaacks-Downton, & Wells et al., 2006; Lee, Chung, Chan, & Chan, 2005; Pelletier, 2004). Research also demonstrates that listening to music can influence patients' perception of pain and discomfort (e.g., AMTA, n.d.; Mitchell & MacDonald, 2006; Noguchi, 2006). And, several studies indicate that music listening can evoke positive changes in mood and emotional states in patients (e.g., Le Roux, Bouic, & Bester, 2007).

Effect of Music on Mood and Emotions

A variety of studies have looked at emotional responses to recorded music in healthy individuals or groups. Findings suggest that music played in major modes elicit responses associated with happiness while minor modes elicit responses related to sadness (Henver, 1936; Brunner II, 1990). DiGiacomo and Kirby (2006) confirmed these findings and report that mixed modes evoke "moderate combination of emotional responses" and instrumental noise elicits "different extreme emotional responses" in listeners.

The change in listeners' emotional states can also be caused by the musical genre. Smith & Joyce (2004) report that individuals who listened to Mozart reported higher levels of relaxation and lower levels of stress than the two control groups who listened to New Age music or read popular recreational magazines. Burns, Labbé, Arke et al. (2002) found that undergraduate students listening to classical or relaxation music were more relaxed and less anxious than those who listened to hard rock music. As pointed out in several studies, culturally-influenced music may have an effect on the perception of the listener that should be considered (Darrow, 2006; DiGiacomo & Kirby, 2006).

Researchers have also evaluated if listeners can identify a composer's intended meaning behind the music. Gabrielson & Lindstrom (1995) and Gabrielson & Juslin (1996) found that healthy listeners successfully identified the performers' intended emotional expression in music performed live using various melodic instruments (e.g., synthesizer, electronic guitar, violin, flute, and voice).

Music Therapy in Wellness

The wellness movement has put music therapy in a more prominent position than it has held in the past. Music therapists have been responding to the growing wellness trend, using prevention measures in educational (Hall, 1998; Preschool Education, 2007), geriatric (VanWeelden & Wipple, 2004), and corporate (Hall, 1998; Stevens, 2005a) settings. Specific music therapy-based wellness programs fit well into the wellness paradigm as they can: a) address various dimensions of wellness (i.e., physical, social, intellectual, emotional/mental, and spiritual); b) be easily adapted to groups and partially self-implemented by individuals; and c) give structure to wellness exercises, lending meaning to wellness techniques (Ghetti, Hama, & Woolrich, 2004).

To date, research investigating music therapy-based wellness programs is limited. Stevens (2001, 2005b) and Hull (1998) are proponents of using community drum circles as a form of wellness. Bittman, Felten, & Westengard et al. (2001) found that drumming strengthens the immune system of healthy adults by combating the effects of stress. In addition, recreational music making can reduce burnout in long-term care workers and nursing students by improving mood states (Bittman, Bruhn, & Stevens et al., 2003; Bittman, Snyder, & Bruhn et al., 2004). It was also found that playing a musical instrument could reverse some of the negative effects of stress (Bittman, Berk, & Shannon et al., 2005) and decrease levels of anxiety and loneliness (Koga & Tims, 2001). No research has been found that explores the effects of intentionally recorded percussion music addressing several dimensions of wellness.

Recorded Wellness Music

Humans have intuitively understood the soothing and healing powers of music as well as the emotional impact it can have on an individual (Davis, Gfeller, & Thaut, 1999). The engaging and pleasurable nature of music has often been used to increase participation in wellness efforts (e.g., music accompanying aerobic exercises, yoga practice, or relaxation techniques). Much of the wellness movement involves listening to music to influence an individual's state of mind. Thus, a wide variety of CDs are advertised as "Wellness Music CDs", which promise to have positive effects on the healthy listener. The idea of wellness music CDs was also adopted by RhythmPharm's creator and percussionist, Greg Ellis. He created RhythmTonics™, which is a set of seven CDs that are "live recordings of non-traditional improvised organic percussion music" focusing on the qualities *Growth, Serenity, Balance, Clarity, Nourishment, Vitality,* and *Inner Voyage* (RhythmPharm, n.d.). The composer intentionally chose a palette of percussion instruments to create the intended musical quality for each CD (e.g., gongs and bells for *Serenity*). The classification of the musical pieces on each CD was influenced by both the composer's intent while improvising and recording, as well as his personal response when listening to each musical piece afterwards. Ellis' overall intention behind the complete set of seven CDs is "to revitalize the natural flow of the intuitive mind, to balance spiritual and physical aspects of one's being, and to facilitate being in the moment" (Kern, 2006).

This pilot project used RhythmTonics™ as an example to examine whether intentionally recorded percussion music (i.e., music that has been composed and recorded with the intent of evoking a specific wellness effect in the listener) can affect the mood, level of relaxation, energy level, or focus of the listener, as well as whether or not a group of listeners can identify the composer's intent behind the music.

Method

Participants

The participants in this pilot study were 208 (n=208) undergraduate students from three music related classes at a Canadian university in Ontario. The classes required no pre-requisites and were open to anyone. All students in these classes were given the opportunity to participate in the study. One hundred and eighty-four (n=184) qualified for data analysis. Twenty-four were disqualified due to the following reasons: questions left unanswered or more than one answer given for a question (11); other responses than choices given (4); and/or previous experiences with the selected musical excerpts (9). Of the remaining 184 participants, 169 students age ranged from 18–24 years, 11 from 25-34 years, and four were 35 years or older. Twenty-five of these participants were music therapy students. 64 students identified having used recorded music for relaxation or meditation purposes on a regular basis before. Participants were not asked for their gender. All students participated voluntarily and anonymously. Participants' consent was obtained and ethical guidelines were followed throughout the study.

Materials

For this study, three, 30–second audio excerpts selected from the RhythmTonics™ (RhythmPharm, 2005a) collection were used. The first author chose excerpts from the following three out of seven CDs: *Serenity* (second CD; track 2) (RhythmPharm, 2005b), *Clarity* (fourth CD; track 1) (RhythmPharm, 2005c), and *Vitality* (sixth CD; track 3) (RhythmPharm, 2005d). Synonyms assigned by the composer to these titles are *calm, focus,* and *energy,* respectively. Musical excerpts were started at the four minute mark in order to allow participants to hear the most "characteristic" sound from each CD. A portable CD player with a timer was used to ensure the same length and sound quality of each excerpt.

This collection of music was chosen for several reasons: 1) the recording is percussion music only; 2) the musical pieces are created with handmade percussion instruments from different parts of the world; and 3) the music was recorded in real time without any editing or technical restrictions. It was anticipated that the combination of these elements would limit cultural or music preference bias related to modes, musical genre or any effects due to lyrics. In addition, it was more likely that this music was not heard before and therefore not associated with previous experiences or emotions of the participants. A questionnaire including 24 questions (4 demographic questions, 3x4 pre/post test questions, 3 intent identification questions, 1 control question) was developed by the first author. The initial questions assessed participants' age, whether or not they were music therapy students, if they had participated in the study before and how often recorded music was used for relaxation or meditation purposes in daily life. Pre/post test questions evaluated participants' current *mood* (from Sad/Angry, Unhappy, Neutral, Happy to Very Happy/Excited), *level of relaxation* (from Not relaxed at all, A little bit relaxed, Fairly relaxed, to Totally relaxed) *energy level* (from Not alert at all, Somewhat alert, Fairly alert to Totally alert), and *level of focus* (Not focused at all, somewhat focused, Fairly focused to Totally Focused). To identify the composer's intent behind the musical excerpt, participants were given a choice of five descriptive titles (i.e., *Joy, Serenity, Vitality, Clarity,* and *Optimism*) to choose from. Three of five options (i.e., *Serenity, Vitality,* and *Clarity*) reflected the composer's label and intent behind the music, two titles (i.e., *Joy* and *Optimism*) were added by the first author in an attempt to match the composer's titles. The five descriptive titles were presented in a different order after each musical excerpt. The final question controlled for familiarity with the audio excerpts.

Procedure

Data was collected during three separate night time classes over two days. Previous to data collection, participants received a letter of information, two copies of the consent form, the questionnaire, and a Scantron sheet. After a brief explanation of the study, participants completed the initial section of the questionnaire and the first set of pre-test questions. Participants were then asked to listen to the first musical excerpt and answer the musical identification questions followed by the set of post-test questions. This procedure was repeated identically for all three musical excerpts. The musical excerpts were presented in the following order: *Clarity (focus), Serenity (calm),* and *Vitality (energy).* The entire process took participants less than 15 minutes to complete. Data sheets were sorted by hand and the 24 disqualifying responses removed. The data was then analyzed using SPSS version 13.0 (SPSS, Inc., Chicago IL)

Results

Results depicted in Table 1 show that all music excerpts had an effect on participants' mood as well as their levels of relaxation, energy, and focus.

Baseline measurements of mood, relaxation, and focus were the lowest self-reported scores throughout the experiment (see Table 1). After listening to the first excerpt, *Clarity (focus)*, participants showed a significant increase over baseline measurements in mood (t=2.83, p<.05), relaxation (t=5.21, p<.001), energy (t=3.95, p<.001), and focus (t=5.28, p<.001). After listening to the second excerpt, *Serenity (calm)*, results showed no significant increase over previous scores in relaxation (t=-1.26, p=.21) but a significant decrease in mood (t=-2.69, p<.05), energy (t=-3.78, p<.001), and focus (t=-2.60, p<.05). After the third excerpt, *Vitality (energy)*, there was a significant increase over previous scores in mood (t=3.94, p<.001), decrease in relaxation (t=-3.78, p<.001), increase in energy (t=8.60, p<.001), and focus (t=4.11, p<.001).

Table 1: Effects of music excerpts on participant's mood, level of relaxation, level of energy, and level of focus (Mean Scores out of 4).

	Mood	Relaxation	Energy	Focus
Baseline	3.06	2.34	2.33	2.20
After 1st excerpt (*Clarity*)	3.22∞	2.64∞∞	2.54∞∞	2.49∞∞
After 2nd excerpt (*Serenity*)	3.07∞	2.71	2.32∞∞	2.34∞
After 3rd excerpt (*Vitality*)	3.26∞∞	2.49∞∞	2.79∞∞	2.59∞∞

∞Significant difference from previous, p<.05
∞∞Significant difference from previous, p<.001

Results also showed that many participants agreed on a descriptive title when it came to identifying the composer's intent behind the excerpts (see Figures 1–3). After listening to the first excerpt, *Clarity (focus)* was correctly identified by 20.1% of participants (~0% reliability (kappa)). After listening to the second excerpt, which was *Serenity (calm)*, 45.1% of participants correctly identified it as such (reliability = ~24% (kappa)). The composer's intent behind the third excerpt, *Vitality (energy)*, appeared to be less clear, with 32.6% assigning the title *Joy*, 28.3% correctly identified it as *Vitality (energy)*, and 23.9% identified it as *Optimism* (reliability = ~10%).Overall, participants identified 31.2% of the composer's intended meaning behind the music with ~ 14% reliability (kappa)" [see graphs next page].

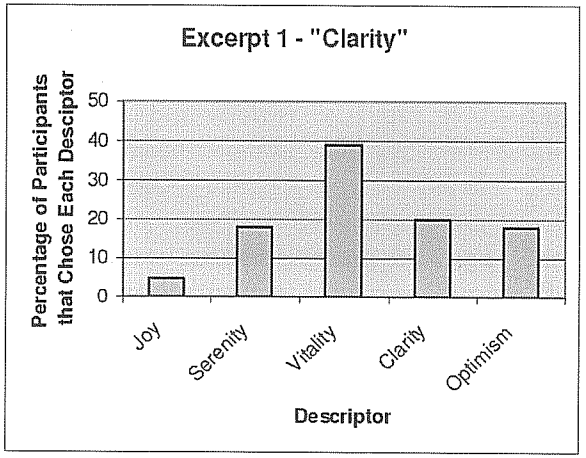

Figure 1. Results when participants were asked to choose a descriptive title for the excerpt *Clarity (focus)*.

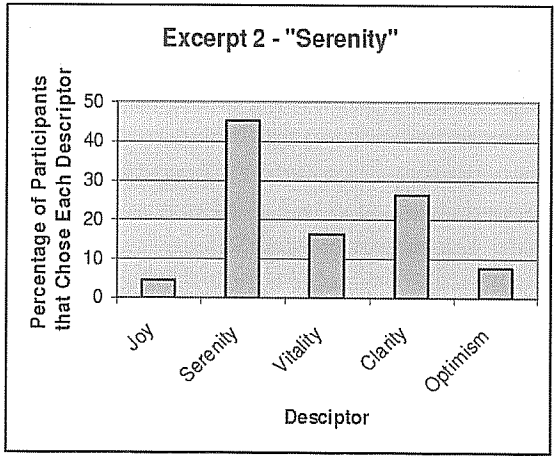

Figure 2. Results when participants were asked to choose a descriptive title for the excerpt *Serenity (calm)*.

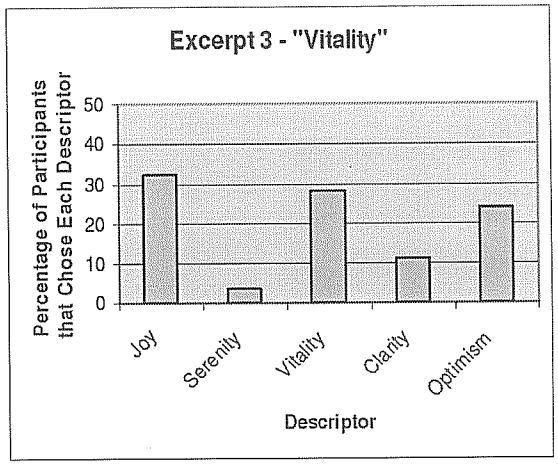

Figure 3. Results when participants were asked to choose a descriptive title for the excerpt *Vitality (energy)*.

Discussion

The intention of the presented pilot study was to determine if recorded percussion music composed for wellness purposes elicits specific responses in the listener and if so, whether or not they match the composer's intended meaning behind the music. As illustrated by the data, each excerpt had an effect on all aspects being measured and reflected the composer's intent. However, the intent behind the musical pieces was not always correctly identified as such.

After listening to the first excerpt entitled *Clarity (focus)*, participants reported positive changes in their mood as well as an increase in their level of relaxation, energy, and focus. The excerpt entitled *Serenity (calm)* decreased participants' scores on the mood scale (0= Sad/Angry, 1=Unhappy, 2=Neutral, 3=Happy, 4=Very Happy/Excited) as well as their levels of energy and focus, but did not significantly affect the level of relaxation. One reason for this might be that the previous musical excerpt already elicited a significant change in relaxation and the additional 30 seconds *Serenity (calm)* excerpt might not have allowed for sufficient time to move listeners into a significantly deeper state of relaxation. It is also possible that the setting was simply not conducive to relaxation. The third excerpt entitled *Vitality (energy)*, like *Clarity (focus)*, increased participants' mood as well as their level of energy and focus, and decreased the listeners' level of relaxation.

The findings of this pilot study support the use of recorded music to elicit positive changes in mood and emotional states (Hirokawa & Ohira, 2003) but, for several possible reasons including a too-brief listening period, did not show significant results to support relaxation in healthy listeners (in contradiction to Smith & Joyce, 2004). It extends the literature by showing that recorded music can also have a positive effect on the energy level and level of focus of the listeners.

The value of percussion music on participants' stress and mood level has been demonstrated previously in community drumming (Bittman, Berk, & Felten et al., 2001; Bittman, Snyder, & Bruhn et al., 2004). This study suggests that using recorded percussion music can also have positive effects on listeners' well-being. Results in the "real world" will differ from those found in the study, of course, in that people who aim to use recorded music for specific goals will generally listen to it for longer than 30 seconds and will also use it in a physical and emotional setting that is in tune with the goal they are aiming for. Percussion music might be a desirable alternative to classical or new age music as it might limit cultural or musical preference bias to modes, musical genre or lyrics. These differences would hopefully result in more noticeable differences in the individual's "before" and "after" states than were reported in this study.

In general, listeners identified the common characteristic of the musical excerpts (i.e. music for relaxation or activation), meaning nearly half of all participants identified the musical excerpt *Serenity (calm)* as relaxation music, whereas the other two excerpts *Clarity (focus)* and *Vitality (energy)* were identified as activating music by the majority of participants. It is possible that listeners identified the *Serenity (calm)* excerpt because it was quite different in character from the other excerpts, including the use of different percussion instruments as well as slower pulse. The order in which the excerpts were presented might also have influenced the identification of the excerpts. Placing *Serenity (calm)* between *Clarity (focus)* and *Vitality (energy)* could have made a clearer comparison than presenting this excerpt before or after the other two excerpts. As no definitions of the descriptive titles were offered, it is not clear if the participants' definitions of the titles were the same. For example, those who identified *Vitality (Energy)* in excerpt one may have actually been attending to the same qualities of the music as those who named it *Clarity (focus)*. Thus, listeners could have chosen different titles to describe the same quality. In previous research, listeners successfully identified the performer's emotional expression in live music using various melodic instruments (Gabrielson & Lindstrom, 1995; Gabrielson &

Juslin, 1996). However, identifying the intent behind percussion music might be different as melodic and harmonic cues are missing.

Another issue brought up by participants after data collection was the limited options describing each excerpt. Several participants noted that they felt anger and frustration when hearing particular excerpts and none of the available options reflected these emotions. Nevertheless, the presented choices reflected the composer's titles, supplemented with the first author's choice of two additional words matching the wellness aspects. The assumption was that no one would use wellness music to evoke feelings of anger or frustration, although these may be very valuable emotions to address during a music therapy session. They are also valuable emotions for an individual to explore in order to gain insight into their own mechanisms for coping with stress and various emotions. Individuals can take the opportunity to explore what it was that triggered the feelings of anger or frustration: the music itself, the setting, the fact that class time was taken up for such a project, or some other factor entirely.

Even though the results of this pilot study indicate that recorded percussion music can have a significant effect on an individual's state of mind and several participants may agree on what the intent of certain music is, not all participants were in agreement with the group. Thus, music therapists working in preventative settings should consider this when choosing recorded music to accomplish particular goals. Although some research investigations suggest that client preferred music has a greater effect on treatment outcomes related to anxiety and stress (e.g., Clark, Isaacks-Downton, & Wells et al., 2006), Pelletier's (2004) meta-analysis clearly indicates that research-based music has a greater effect on stress reduction than music selected by clients. Music therapists, therefore, should familiarize themselves with research supported music selections addressing specific goals and objectives. This pilot study clearly supports that the composer's intent behind the music is important and can have an influence on the listener. In general, the power of intention, both for recorded and live music (i.e., improvisation and performed compositions) should not be underestimated and should be considered when using music as a therapeutic tool.

This pilot study has several limitations; for example, only 30–second music excerpts were studied because of the limited class time available. Replication of this study including longer excerpts or the complete cycle of the chosen music is recommended. Further, this study only used musical pieces from one composer. Thus, it is unclear if other percussion music would produce similar results. A comparison to other percussion-based wellness music is warranted. Additionally, the questionnaire used in this pilot study does not represent a standardized measurement tool since reliable methods to measure multi-dimensions of wellness are still limited. A more rigorous measurement tool might increase the validity of this study. Future studies should look at the effects of recorded percussion music on other dimensions of wellness (e.g., social and spiritual growth), and evaluate applications in a variety of settings. In addition, studies should investigate if recorded percussion music will limit the cultural and musical boundaries and function as "universal music" for a broader group of listeners. It would also be interesting to explore if the use of percussion music in conjunction with other wellness techniques (e.g., yoga, massage therapy, or music therapy-based wellness programs) would further refine the therapeutic efficacy of recorded music.

Conclusion

As there is an increasing demand in healthcare to maintain health and develop well-being, music can be a valuable resource for individuals who are seeking non-invasive ways to make an impact on their physical, social, intellectual, emotional/mental, and spiritual state. Although listening to recorded music (such as the series of CDs introduced in this pilot study) can support well-being, one should keep in mind that not every musical piece will have the same desired effect on each listener. Therefore, though the use of recorded wellness music may vary according to an individual's life history, experiences, and cultural background, using research-based music with a therapeutic intent is desirable. Music therapy interventions may maximize the positive impact of music listening for one's health, as all dimensions of wellness and individual needs can be addressed. It would be desirable that composers of wellness music and music therapists collaborate to make better use of music listening for health promotion.

References

American Music Therapy Association (n.d.). Factsheet: Music therapy in the treatment and management of pain. American Music Therapy Association: Silver Spring, MD.

Biley, F. C. (2000). The effects on patient well-being of music listening as a nursing intervention: A review of the literature. *Journal of Clinical Nursing, 9*, 668–677.

Bittman, B., Berk, L. S., Felten, D. L., Westengard, J., Simonton, O. D., Pappas, J., & Ninehouser, M. (2001). Composite effects of group drumming music therapy on modulation of neuroendocrine-immune parameters in normal subjects. *Alternative Therapies, 7*(1), 38–47.

Bittman, B., Berk, L., Shannon, M., Sharaf, M., Westengard, J., Guegler, K. J., & Ruff, D. W. (2005). Recreational music-making modulates the human stress response: A preliminary individualized gene expression strategy. *Medical Science Monitor, 11*(2), 31–40.

Bittman, B., Bruhn, K. T., Stevens, C. S., Westengard, J., & Umbach, P. O. (2003). Recreational music-making: A cost-effective group interdisciplinary strategy for reducing burnout and improving mood states in long-term care workers – insights and potential economic impact. *Advances in Mind-Body Medicine 19*(3/4), 4–13.

Bittman, B., Snyder, C., Bruhn, K. T., Liebfried, F., Stevens, C. K., Westengard, J., Umbach, P. O. (2004). Recreational music-making: An integrative group intervention for reducing burnout and improving mood states in first year associate degree nursing students: Insights and economic impact. *International Journal of Nursing Education Scholarship, 1*(1), Article 12.

Brunner II, G. C. (1990). Music, mood and marketing. *Journal of Marketing, 54*, 94–104.

Burns, J. L., Labbé, E., Arke, B., Capeless, K., Cooksey, B., Steadman, A., & Gonzales, C. (2002). The effects of different types of music on perceived and physiological measures of stress. *Journal of Music Therapy, 39*(2), 101–116.

Clark, M., Isaacks-Downton, G., Wells, N., Redlin-Frazier, S., Eck, C., Hepworth J. T. & Chakravarthy, B. (2006). Use of preferred music to reduce emotional distress and symptom activity during radiation therapy. *Journal of Music Therapy, 43*(3), 247–265.

Davis, W. B., Gfeller, K. E., Thaut, M. H. (1999). *An introduction to music therapy theory and practice* (2nd Ed.). Boston: McGraw-Hill College.

Darrow, A. (2006). The role of music in deaf culture: Deaf students' perception of emotion in music. *Journal of Music Therapy, 43*(1), 2–15.

DiGiacomo, A. & Kirby B. J. (2006). The effect of musical mode on emotional state. *Canadian Journal of Music Therapy, 12*(1), 68–87.

Dunn, G. H. (1959). What high-level wellness means. *Canadian Journal of Public Health, 50*, 447–457.

Gabrielson, A. & Lindstrom, E. (1995). Emotional expression in synthesizer and stenograph performance. *Psychomusicology, 14*, 94–116.

Gabrielson, A. & Juslin P. N. (1996). Emotional expression in music performance: Between the performer's intention and the listener's experience. *Psychology of Music, 24*, 68–91.

Ghetti C. M., Hama M, & Woolrich, J. (2004). Music therapy in wellness. In A-A. Darrow (Ed.). *Introduction to approaches in music therapy* (pp. 127–141). American Music Therapy Association: Silver Spring, MD.

Hull, A. (1998). *Drum circle spirit: Facilitating human potential through rhythm*. White Cliffs Media: Reno, NV.

Henver, K. (1936). Experimental studies of the elements of expression in music. *American Journal of Psychology, 48*, 246–268.

Hirokawa, E., & Ohira, H. (2003). The Effects of music listening after a stressful task on immune functions, neuroendocrine responses, and emotional states in college students. *Journal of Music Therapy, 40*(3). 189–211.

Kern, P. (2006). Rhythm is the source of all existence: An interview with percussionist Greg Ellis. *Music Therapy Today (Online 1st October) Vol. VII*(3), 701–706.

Koga, M., & Tims, F. (2001). The music making and wellness project. *The American Music Teacher, 51*(2), 18–22.

Le Roux, F. H., Bouic, P. J. D., & Bester, M. M. (2007). The effects of Bach's *Magnificat* on emotions, immune, and endocrine parameters during physiotherapy treatment of patients with infectious lung conditions. *Journal of Music Therapy, 44*(2), 156–168.

Lee, O. K., Chung, Y. F. L., Chan, M. F., & Chan, W. M. (2005). Music and its effect on the physiological responses and anxiety levels of patients receiving mechanical ventilation: A pilot study. *Journal of Clinical Nursing, 14*, 609–620.

Mitchell, L. A., & MacDonald, R. A. R. (2006). An experimental investigation of the effects of preferred and relaxing music listening on pain perception. *Journal of Music Therapy, 43*(4), 295–316.

National Institute of Wellness (n.d.). Defining wellness. Retrieved May 12, 2007, from http://www.nationalwellness.org/index.php?id=390&id_tier=81

Noguchi, L. K. (2006). The effects of music versus nonmusic on behavioural signs of distress and self-report of pain in pediatric injection patients. *Journal of Music Therapy, 43*(1), 16–38.

Pelletier, C. L. (2004). The effect of music on decreasing arousal due to stress: A meta-analysis. *Journal of Music Therapy, 41*(3), 192–214.

President's Council on Physical Fitness and Sports (2001). Toward a uniformed definition of wellness: A commentary. *Research Digest, 3*(15), 1–8.

Preschool Education (2007) Music and songs. Health and Safety. Retrieved May 21, 2007, from http://www.preschooleducation.com/shealth.shtml

RhythmPharm (n.d.) Tonics. Retrieved April 23, 2006, from https://www.rhythmpharm.com/index2.htm

RhythmPharm (2005b). Clarity (focus). Dosage Y1:1. On *RhythmPharm Vol. 1*. Compact Disc. Los Angeles, CA: Sphota Music (BMI).

RhythmPharm (2005c). Serenity (calm). Dosage B1:2. On *RhythmPharm Vol. 1.* Compact Disc. Los Angeles, CA: Sphota Music (BMI).
RhythmPharm (2005d). Vitality (calm). Dosage R1:3. On *RhythmPharm Vol. 1.* Compact Disc. Los Angeles, CA: Sphota Music (BMI).
Smith, B. J., Tang, K. C., & Nutbeam, D. (2006). WHO health promotion glossary: New terms. *Health Promotion International, 1–6.* Oxford University Press.
Smith, J. C., & Joyce, C. A. (2004). Mozart versus New Age music: Relaxation states, stress, and ABC relaxation theory. *Journal of Music Therapy, 41*(3), 215–224.
Smith, J. L, & Noon, J. (1998). Objective measurement of mood change induced by contemporary music. *Journal of Psychiatric and Mental Health Nursing, 5.* 403–408.
Standley, J. M. (2000). Music research in medical treatment. In D. Smith (Ed.). Effectiveness of music therapy procedures: Documentation of research and clinical practice (pp. 1–64). American Music Therapy Association: Silver Spring, MD.
Stevens, C. (2005a). Unbound sound: Team building. Retrieved May 18, 2007, from http://www.ubdrumcircles.com/products_team.html
Stevens, C. (2005b). *The Healing drum kit.* Retrieved May 18, 2007, from http://www.ubdrumcircles.com/products_kit.html
Stevens, C. (2001). Should drums be sold in pharmacies? Retrieved May 18, 2007, from http://www.ubdrumcircles.com/articles/DrumsInPharmacies.php
VanWeelden, K. & Wipple, J. (2004). Effect on field experiences on music therapy students' perception of choral music for geriatric wellness programs. *Journal of Music Therapy, 41*(4), 340–352.
Wikipedia (2007). Glossary of alternative medicine. Retrieved May 21, 2007, from http://en.wikipedia.org/wiki/Terms_and_concepts_in_alternative_medicine#Alternative_medicine.
World Health Organization (WHO) (1947). Constitution of the World Health Organization. *Chronicle of the World Health Organization, 1,* 29–43.

Portraiture and the Role of Researcher: Reflections and Questions

La méthode de l'art du portrait et le rôle du chercheur : réflexions et questions

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Abstract

This paper describes portraiture, a method of inquiry, and how it provides a fitting frame for articulating the role of researcher. A summary of the author's doctoral inquiry into children's intuitive musical understandings is followed by a discussion of the six interrelated ways in which portraitists conceptualize the voice as research instrument, namely voice as witness, voice as interpretation, listening for voice, voice in dialogue, voice as preoccupation, and voice as autobiography. This discussion is interspersed with the author's reflections on her own epistemological, theoretical, and methodological positioning as researcher. This article concludes with a list of questions for reflection aimed at inspiring readers to begin—or continue—reflecting on the assumptions, theories, values, and motives that inform their roles as music therapy clinicians and researchers.

Key words: portraiture, research methodology, qualitative inquiry, reflective practice, music therapy, voice, metaphor.

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