

RESEARCH | PEER REVIEWED

## Finding Our Voices, Singing Our Truths: Examining How Quality of Life Domains Manifested in a Singing Group for Autistic Adults

Laurel Young<sup>1\*</sup>

1 Concordia University, Montréal, Canada

\*[laurel.young@concordia.ca](mailto:laurel.young@concordia.ca)

Received: 14 September 2018 Accepted: 17 February 2020 Published: 1 July 2020

Editor: Avi Gilboa Reviewers: Chava Weiss, Susanna Cohen

### Abstract

A growing body of literature indicates that participation in singing groups has a range of health and wellbeing benefits for the general adult population and for various adult cohorts with specific challenges/needs. However, no research had been conducted on potential benefits of group singing for Autistic adults. Furthermore, the neurodiversity movement rejects a biomedical approach to autism and champions the need for supports that will empower individuals on the autism spectrum to participate in society on their own terms. This aligns well with community music therapy (CoMT) philosophy which maintains that all persons have a right to access and participate in music experiences that promote personal health and wellbeing as well as serve as an expression of individuality, culture, and community. Therefore, the present research investigated how quality of life (QoL) variables (considered as components/determinants of health and wellbeing) manifested for eight Autistic adults who participated in 12 group singing sessions. A mixed methods concurrent transformative design was used with priority given to qualitative data. Results illustrate how subdomains contained within overarching QoL domains of Being, Belonging, and Becoming were realized by the group participants. Limitations of the study as well as implications for practice and research are presented.

**Keywords:** *group singing, autistic adults, neurodiversity, quality of life, health and wellbeing, community music therapy*

### Author's note

I would like to acknowledge the legitimate safety concerns raised recently about group singing and infection control in light of the COVID-19 pandemic. Moving forward, it is my belief that music therapist clinicians, researchers, and other stakeholders must collaborate to determine new and innovative ways via which persons can continue to safely sing together and realize the myriad of benefits that this uniquely human creative endeavor can offer.

## Situating the Researcher

Over my past 25+ years as a music therapist, I have worked from a perspective where music therapy serves as a culturally situated health resource that can help people to reach their full potential for living well, within whatever life circumstances they find themselves. This does not necessarily preclude the idea that music therapy *interventions* may be used to alleviate symptoms or address problems per se, but rather focuses more broadly on helping people to engage in music experiences and the relationships that develop through them in ways that will help them to discover and develop their own unique personal potentials thereby enhancing their quality of life—whatever that means for them. Of course, this not a new idea or unique way of working, as other music therapy authors have expressed similar or complementary views (e.g., Ansdell, 2002; Bruscia, 2014; Rolvsjord, 2010; Ruud, 2010; Stige, 2002, to name but a few). However, my practice organically evolved in this way, before I began to delve into literature that helped me to further articulate and develop my music therapy philosophy and approach.

Singing has always been an integral part of my music therapy practice. I believe that singing is an innate form of human expression and that most people have the capacity to realize their unique vocal potential in creative and meaningful ways. For persons who feel disempowered or marginalized as a result of challenging life circumstances, depersonalized healthcare/social services systems, societal views, etc., I have witnessed first-hand how the process of finding one's own voice through constructive singing experiences can serve as a powerful metaphor that helps individuals to feel an increased sense of agency and an enhanced sense of connection to one's self and others. As a researcher, I am interested in understanding and explicating how singing may (or may not) be helpful to various groups of people in context (e.g., see Young, 2009; Young & Nicol, 2011; Young & Pringle, 2018). The current paper presents an exploratory research project conducted with eight Autistic adults<sup>1</sup> who participated in a limited term singing group held within a university research centre milieu.

## Group Singing, Health, and Wellbeing

Within the context of the present study, health and wellbeing<sup>2, 3</sup> are positioned within a holistic biopsychosocial perspective that encompasses body, mind, spirit, society, culture, and environment, and proposes that these elements interact in complex ways which as a whole affect individuals' quality of life (Bruscia, 2014; Engel, 1977; Ruud, 2010). Studies situated within various fields (e.g., health psychology, music education, arts-in-health, music therapy, etc.) have identified a range of [perceived and measured] health and wellbeing benefits experienced by adults from the general population who participated in non-clinical singing group initiatives (e.g., established choirs/chorale groups, amateur community choruses, research-based singing groups, etc.). These benefits included: improved breathing, voice quality, and posture (Clift & Hancox, 2001); positive immunological responses (e.g., increased levels of salivary immunoglobulin A; Kreutz, Bongard, Rohrmann, Hodapp, & Grebe, 2004); improved mood/affect (Busch & Gick, 2012; Judd & Pooley, 2014; Linnemann, Schnersch, & Nater, 2017; Livesay, Morrison, Clift, & Camic, 2012), reduced feelings of stress (Judd & Pooley, 2014; Linnemann, Schnersch, & Nater, 2017); increased feelings of relaxation and heightened feelings of energy (Livesay et al., 2012; Mellor, 2013; Vaillancourt, Da Costa, Han, & Lipski, 2018); cognitive stimulation and new learning (Livesay et al. 2012); enhanced self-awareness (Mellor, 2013); meaningful social and musical connections made with others (Faulkner & Davidson, 2006; Stewart & Lonsdale, 2016; Vaillancourt et al., 2018); feelings of belonging and sense of community connection (Judd & Pooley, 2014; Livesay et al., 2012; Mellor, 2013; Stewart & Lonsdale, 2016); enhanced feelings of self-confidence, self-esteem, personal growth, accomplishment, life meaning/purpose and vitality (Busch & Gick, 2012; Livesay et al., 2012; Vaillancourt et al., 2018).

Other publications have described how group singing may promote health and well-being among various adult cohorts who are facing particular challenges or have specific needs. These include persons affected by: aphasia (Tamplin, Baker, Jones, Way, & Lee, 2013); cancer (Young, 2009); chronic pain (Grape, Theorell, Wikstrom, & Ekman, 2009; Kenny & Faunce, 2004); dementia (Bannan & Montgomery-Smith, 2008; Dassa & Amir, 2014; Lesta & Petocz, 2006); respiratory issues (Bonilha, Onofre, Vieira, Prado, & Martinez, 2009; Engen, 2005; Goodridge, Nicol, Horvey, & Butcher, 2013; Skingley et al., 2014; Tamplin, 2011); Parkinson's disease (Buetow, Talmage, McCann, Fogg, & Purdy, 2014; Di Benedetto et al., 2009); bereaved individuals (Young & Pringle, 2018); older adults living in the community (Cohen et al., 2006; Hillman, 2002) or in long term care facilities (Clements Cortes, 2013; Summers, 1999); homeless individuals (Bailey & Davidson, 2003, 2005); persons who have been incarcerated (Cohen, 2007; Silber, 2005); and women with eating disorders (Pavlakou, 2009).

To the best of my knowledge, prior to the present study, no research had been conducted on potential benefits of group singing for Autistic adults. Furthermore, it was not known how the identified health and wellbeing benefits of adult singing groups at large (outlined above) may or may not manifest for these individuals. Finally, community music therapy (CoMT) literature (e.g., Ansdell & Pavlicevic, 2004) advocates that all persons have a right to access and participate in music experiences that not only promote personal health and wellbeing but also serve as an expression of their individuality, culture, and community. My discussions with social services professionals as well as a review of relevant scholarly literature (e.g., Milen & Nicholas, 2017) and online news sources (e.g., McQuigge, 2018) revealed a lack of supportive psychosocial programming (in my community and in general) tailored to meet the needs and develop potentials of Autistic adults. Cumulatively, these gaps in knowledge and service indicated a need for the present inquiry.

### Autism, Neurodiversity, and Music

The *Diagnostic and Statistical Manual of Mental Disorders*, (5<sup>th</sup> ed., *DSM-5*) categorizes autism as a neurodevelopmental disorder realized on a spectrum with varying levels of severity and acknowledges that every individual with autism spectrum disorder (ASD) is unique in their abilities and challenges. However, a diagnosis of ASD requires that an individual demonstrate characteristics contained in two overarching categories: (a) impairment in social communication and interaction, and (b) presence of restricted or repetitive patterns of behaviour (American Psychiatric Association, 2013). Although a formal diagnosis may be helpful for individuals and families who want access to support services, Autistic self-advocates (and others) have argued that a biomedical treatment approach wrongly supports the notion that autism is a condition to be cured rather than a core aspect of one's identity. Instead, they propose a neurodiversity perspective wherein neurological differences are understood as "part of the broad landscape of human diversity" (ASAN, 2018a, para. 5) and the idea that there is "one right style of neurocognitive functioning, is no more valid than the idea that there is one normal or right gender, race or culture" (Walker, 2018, para. 2). The neurodiversity paradigm does not ignore the fact that there are significant challenges associated with autism but rather embraces the idea that each individual on the spectrum has a fundamental right to the supports that they need to become self-actualized rather than normalized (Aigen, 2016; ASAN, 2018b; 2018c; Straus, 2014).

Music often plays an important role in the lives of Autistic individuals. They frequently demonstrate strong musical skills and abilities (e.g., Autism Canada, 2017; Jones, 2013) and a distinct responsiveness to music (e.g., Allen, Hill, & Heaton, 2009; Hillier, Kopec, Poto, Tivarus & Beversdorf, 2016). Scholars have examined how autistic traits (e.g., heightened sensitivities, focused attention to detail, preference for routine/order, etc.) may be associated with the musical genius of notable artists such as pianist Glenn Gould (Maloney, 2006) and composer Erik Satie (Fung, 2009). Ethnomusicologist Michael Bakan (2018) published a book entitled *Speaking for Ourselves: Conver-*

*sations on Life, Music, and Autism*, where he collaborated with 10 Autistic individuals (ages 7 to 47) to explore not only how they make and experience music and why music matters to them, but also to challenge preconceived notions that much of society holds about autism. Bakan is also a founding member of ARTISM (*Autism: Responding Together in Sound and Movement*), a neurodiverse music performance group comprised of Autistic children, their parents, and professional musicians (Bakan, 2014). While acknowledging contributions that music therapy has made to the ARTISM project and to the domain of autism at large, Bakan also critiques the symptom-focused approach often utilized in music therapy. Instead, he strongly advocates that music therapists adopt a paradigm shift from pathology to neurodiversity and assume an ethnomusicologically informed music therapy approach that does not target “Autistic ways of being for change, but rather [targets] change through the embrace of Autistic ways of being” (Bakan, 2014, p. 9).

Although there is a significant amount of literature on music therapy and Autistic children (mostly symptom-focused as noted by Bakan), relatively little research has been conducted on music therapy and Autistic adults. Three quantitative studies have examined various effects of music therapy/music intervention on challenges and symptoms associated with autism. The first investigated whether a musical training program based on interactive group music therapy sessions (including singing) could enhance the behavioral profile and the musical skills of young Autistic adults (N = 8; Boso, Emanuele, Minazzi, Abbamonte, & Politi, 2007). Results indicated significant improvements on the Clinical Global Impression (CGI) scale and the Brief Psychiatric Rating Scale (BPRS) as well as improved music skills (measured using 5-point Likert type scales). The second study examined the impact of a group music intervention program<sup>4</sup> on the self-esteem, anxiety, and attitudes toward and relationships with peers of Autistic adolescents and young adults (N = 22) as measured by the Rosenberg Self-Esteem Scale (SES), the Index of Peer Relations (parent and participant version; IPR), and the State-Trait Anxiety Inventory (trait version; Hillier, Greher, Poto, & Dougherty, 2011). Responses on all three measures showed positive improvements following participation in the group music program. Participants also gave positive feedback on a questionnaire designed to assess whether they had found the program enjoyable, interesting, whether they had benefited socially, and whether they had made friends in the program. The third study examined the effect of a combined dance/movement and music therapy group (that included singing) on the symptoms of young Autistic adults (N = 16; 8 in treatment group, 8 in control group). Positive impact was noted in the areas of regulation/behavioral variability, imitation disorder, instinct disorder and emotional disorder as measured by Revised Clinical Scale for the Evaluation of Autistic Behavior (ECA-R; Mateos-Moreno & Atencia-Dona, 2013).

Two studies have examined existing music therapy practices for Autistic individuals. The first involved analyzing data related to goals and outcomes in a music therapy program that had served over 40 Autistic individuals ages 2 to 49 years over a 2-year period (Kaplan & Steele, 2005). Interactive singing was cited as one of several frequently used interventions. However, the results were not organized according to age group, so it is difficult to draw any specific conclusions regarding music therapy practices employed with Autistic adults. This was also the case in a survey study that gathered information on “the status of music therapy practices for serving clients with ASD” (Kern, Rivera, Chandler, & Humpal, 2013, p. 274). In this study, 98.6% of respondents (n = 287) indicated that they used singing and vocalization as a music therapy technique. These researchers also gathered demographic information indicating that: more than 40% of respondents worked with Autistic adults aged 21 to 29; more than 30% worked with Autistic adults aged 30-49; and less than 20% worked with Autistic adults aged 50 and older (n = 302; respondents were professional members of the American Music Therapy Association).<sup>5</sup> Respondents also identified a need for more training in music therapy service provision for Autistic adolescents and adults.

Although the literature contains scant information on music therapy with Autistic adults who do not have intellectual disabilities (i.e., akin to participants in the present

study), there are a number of clinical case studies/vignettes that describe music therapy processes of Autistic adults with considerable behavioural, communicative, and developmental challenges. Bergmann (2018), Clarkson (1991), Fischer (1991), Saville (2007), and Wager (2000) each presented cases involving individual music therapy sessions with Autistic adult male clients (22 to 50+ years old) who had such challenges. Music experiences employed included singing and vocalizing, playing/improvising on various instruments (e.g., percussion, piano, ukulele), moving to music, and “song drawings” (Fischer, 1991, p. 359). In all cases, positive outcomes were observed (e.g., enhanced engagement with music, self, and others). Similar outcomes were noted by Turry and Marcus (2003) who described a creative music therapy approach (i.e., Nordoff-Robbins)<sup>6</sup> in a weekly group music therapy context with Autistic adults (ages 20-33; three males, one female) who had very limited verbal expression. Although vocalization or singing was not a core component of this group, the authors noted that an interactive approach to group instrumental improvisation provided the participants with a modality for expressive communication that was “transformative” (p. 218). Similarly, Wagner (2000) indicated that *both* playing and singing music provided her client with “a symbolic, non-verbal, non-threatening way to appropriately interact [and communicate] when verbal interaction was limited. It provided a means of affective expression by him and towards him” (p. 137). Hooper, McManus, and McIntyre (2004) described the use of spontaneous and structured music experiences (with a focus on movement) to address the sensory integration needs of a non-verbal 18-year old Autistic female with severe developmental challenges. Although singing was not emphasized in her sessions, the authors noted the client’s spontaneous vocalizations in response to music experiences, perhaps indicating an area for further exploration. Graham (2004) presented the case of a non-verbal Autistic male in his mid-thirties who had been institutionalized since the age of 13. Her approach focused on the use of vocalization to establish an interactive relationship and develop innate communicative and social skills. Given the constructive exchanges that emerged, she suggested that this interactive vocalization approach could provide opportunities for “preverbal” (p. 24) adult clients to realize improvements in communication in their everyday lives.

Clarkson (1995; 1998; 1998-1999) described how adapted individual guided imagery and music (GIM)<sup>7</sup> sessions used in conjunction with facilitated communication (FC)<sup>8</sup> enabled meaningful music therapy processes for three nonverbal Autistic adult clients (2 males, 1 female). These sessions revealed unexpected and rich inner worlds of these individuals, causing Clarkson to question what she thought she knew about autism. While these sessions did not incorporate client singing or vocalization, this work revealed a potential depth of connection that some Autistic persons may have with music and how that might serve as a vital pathway for various modes of self-expression and communication. This was also the case with *Anna*, a university student in her early 20s, who after many years of struggle, was finally diagnosed with Asperger’s syndrome. Her individual music therapy sessions became “an anchor in her life” (Bergmann, 2018, p. 188) where she used the dulcimer to compose short repetitive melodies that gave her feelings a musical form. The music therapist supported her in decrypting, organizing, and communicating these feelings (Bergmann, 2018).

Given the limited and somewhat narrow scope of publications as well as the identified lack of supportive programming (noted previously), it may be the case that only a relatively small number of Autistic adults have been receiving music therapy services. Although some case studies have focused on development of potentials, it appears that music therapy research and programs often emphasize symptom-management rather than neurodiversity. One notable exception is the Sensory Friendly Concerts? (SFCs) initiative, an innovative CoMT program supported by The Musical Autist, a non-profit organization dedicated to providing “access to the arts and platforms for self-advocacy for musicians on the autism spectrum, through Community Music initiatives” (Musical Autist, 2018, para. 2). In this model, certified music therapists work with Autistic self-advocates (children and adults), family members/caregivers, community musicians, and others to create performance environments where sensory issues and autis-

tic needs/behaviours are accommodated, and musical self-expression and engagement are encouraged with supports provided as needed. Within this forum, Autistic individuals advocate for themselves, work on personal goals, educate others, feel a sense of acceptance within a community, and experience the joys of music on their own terms (Shiloh & Lagasse, 2014). It is relevant to note that I did not become aware of The Musical Autist or the SFCs initiative until after the data collection phase of the present inquiry had been completed. Similarities and distinctions between the present research project and the SFCs initiative will be outlined in the Discussion section.

## Purpose Statement

In summary, a growing body of literature indicates that participation in singing groups may have a range of health and wellbeing benefits for the general adult population and for various adult cohorts with specific challenges or needs. However, it was not known if or how these benefits might manifest for Autistic adults. Although many Autistic persons exhibit strong musical skills and responsiveness to music, it appears that Autistic adults may have limited access to music therapy services, and when they have, these services often emphasize symptom management. Furthermore, benefits or challenges related specifically to singing have not been clearly delineated. The neurodiversity movement rejects a biomedical approach to autism and Autistic self-advocates (and others) champion the need for a range of community supports and services that will empower all individuals on the autism spectrum to participate in society on their own terms.

Within the context of my own clinical work and research, I have witnessed how the process of finding one's own voice through constructive singing experiences can serve as a powerful metaphor that helps individuals to feel an increased sense of agency and an enhanced sense of connection to one's self and others. I believed that a singing group conceptualized within a CoMT approach might provide Autistic adults with a forum within which holistic biopsychosocial aspects of their individual and collective health and wellbeing could be identified and realized. Prior to the present study, no research had been conducted on the potential benefits of group singing for Autistic adults.

Therefore, the purpose of this exploratory research project was to investigate how quality of life variables (considered as components/determinants of biopsychosocial health and wellbeing) might manifest (or not) for eight Autistic adults within a limited term singing group context. It is important to note that *singing* encompassed various means of creative vocal expression including breathing, body, and vocal warm ups, humming, whistling, improvised vocalization with or without words, chanting, and singing precomposed, original, and arranged songs.

## Methodology

### Ethical Approval

Prior to initiation of recruitment or data collection procedures, this study received ethical approval from Concordia University's Human Research Ethics Committee (protocol #30000163) and Comité d'éthique de la recherche conjoint destiné aux CRDITED (CÉRC-0143).

### Participants

A convenience approach to sampling was employed. Participants had to be at least 18 years of age, English speaking, have a diagnosis of high-functioning autism or Asperger's Syndrome,<sup>9</sup> and have the legal capacity to provide their own informed consent. Eligible participants were informed about this study via recruitment procedures initiated by two social services organizations. Twelve potential participants contacted the researcher by telephone or e-mail to inquire about the project. Eight of these individuals

**Table 1**  
Initial Motivations for Participation in the Singing Group

Motivations	Number of participants
Likes to sing; had participated in other formal or informal singing experiences.	4
To expand current music activities, which did not include singing.	1
Singing perceived as a release and form of self-expression.	2
Physical needs (desire to move/dance; uncomfortable with body weight).	2
Desire to be with others.	2
May help with anxiety.	6
Not sure but open to exploring possibilities. Someone they trusted said this might be helpful/enjoyable.	2

(2 females, 6 males; 21–38 years old [ $M = 26.88$ ,  $SD = 5.77$ ]) decided to participate for various reasons (see Table 1).

All participants identified as Canadian though some indicated other cultural connections including South American, Peruvian, Russian, Chinese, German, Italian, and Ukrainian. Six participants did not indicate having a religious affiliation. One identified as a born again Christian and another identified as a Pagan (e.g., observed holidays on the Pagan calendar). Participants were not explicit about their sexual orientations, although one participant spoke openly about involvement in gay pride events and another male participant spoke about having a date with a female. Although all participants had support systems in place, four participants lived independently whereas four lived with one or more family members. The participants also had diverse musical backgrounds, preferences, and dislikes; some had sound sensitivities or other hearing issues. See Table 2 for an overview of this information.

## Design

This exploratory study employed a mixed methods concurrent transformative design, which is “useful for giving voice to alternative perspectives, advocating for research participants, and better understanding a phenomenon that may be changing as a result of being studied” (Hanson, Creswell, Plano Clark, Petska, & Creswell, 2005, p. 229). Theoretically, this aligned well with the purpose of this research (presented above). Qualitative data were collected throughout all phases of the research process and quantitative self-report type data were collected via individual meetings that happened before and after the singing group period (see procedures below). The use of open and closed questions, conversation, and Likert-type scale questions provided participants with different options through which they could express their perspectives. Given the small sample size, the explicit advocacy lens (i.e., neurodiversity and CoMT), and the exploratory nature of the research, priority was given to the qualitative data. Descriptive statistics were embedded into the qualitative results, which helped to verify, challenge, and elucidate some of the qualitative interpretations. This could also be considered as a component of trustworthiness (i.e., validity).

## Data Collection Procedures

Prior to initiating the singing group sessions, I met privately with each participant to discuss the project and gather preliminary data. Each individual completed a form (with support from me as needed), that gathered information on: demographics, motivations for participating in the singing group; and music background, preferences, dislikes, and hearing/sound issues. These interviews were audio recorded to gather information that emerged in conversation and not captured via the form. In addition

**Table 2**  
Music Backgrounds, Preferences, Dislikes, Hearing/Sound Issues

Participant*	Music Background	Music Preferences	Music Dislikes	Hearing/Sound Issues
Nancy	Weekly drum lessons. Previous piano lessons, high school band, sang in camp choir. Listens to music at least 1-hour a day. Attends some live music events.	Classic rock, French language music, drums.	Death metal.	Bothered by thunder, fire alarms.
Gabriel	Previously played drums; took group singing lessons. Usually listens to music daily. Regularly attends live music events.	Pop, dance, rock, Latin music.	Heavy metal.	Sensitive to loud sounds. Some concerts feel overwhelming.
Ted	Played clarinet in high school; had lessons with a voice coach. Listens to music 3-4 hours a day. Does not attend many live music events.	Rock, heavy metal, folk metal.	R & B, hip hop, rap, current pop music.	Hearing loss in left ear. Sensitive to sudden/loud sounds, alarms, vacuum cleaners, loud-speakers.
Sean	Participates in dance classes. Previous experience with songwriting in music therapy. Does not listen to music on a daily basis. Regularly attends live music events.	Country, jazz, classic rock, classical.	Heavy metal, electronic.	None identified.
River	Previous experience with flute, piano, high school choir. Participates in karaoke. Listens to music 2-3 hours a day. Does not regularly attend live music events.	1980s pop and some current pop (female singers).	Old country, 70s pop, rave.	Does not like sounds that screech or scratch.
Harold	Previous experience with alto recorder. Very little experience with singing, even in private. Rarely listens to music. Occasionally attends live music events.	Broadway (operatic), classical symphonies, video game music.	Techno, rap.	Bothered by background noise when trying to sleep.
Dylan	Previous experience with piano, violin, recorder, clarinet. Very little experience with singing, even in private. Listens to music 2-4 hours a day. Regularly attends live music events.	"Oldies" pop (60s-90s), klezmer.	New rap, current pop music.	None identified.
Clare	Some previous involvement with music at school (singing and melodic percussion). Rarely listens to music. Does not regularly attend live music events.	Kids' songs, Disney, TV show themes.	Loud rock.	Slight hearing loss; sensitive to loud/sudden sounds (e.g., balloons popping).

\* Participant names are pseudonyms.

to gathering demographic and background information, Likert type questions (5-point scales) were used to capture participants' attitudes on the importance of music in their daily lives, how they felt about their singing voices, their level of comfort with social situations, their mood and level of anxiety in their daily lives, and how they felt in general about themselves (i.e., their self-esteem) in their daily lives. They were also asked to indicate what they liked most and least about their lives.

All of this information helped me and three graduate research assistants (certified music therapists enrolled in advanced music therapy training) to create a flexible singing group format that was adapted as needed to accommodate individuals' implicit and explicit needs, potentials, and goals as they manifested within a particular session and over the duration of the group. This format included: a brief verbal check-in,



breathing, vocal, and body warm ups (incorporated improvisatory components); one or more opening songs (chosen by the music therapist facilitators; varied according to participants' overall mood, level of energy, anxiety, etc.; often incorporated improvisatory components; sung a cappella or accompanied by a music therapist facilitator on guitar or piano); singing participants' song requests and practicing selected songs arranged for a group CD project (this project was not preplanned and emerged as part of the group process); a closing song (participants voted based on 2-3 songs suggested by music therapist facilitators; suggestions varied according to participants' need for relaxation, energy, and review or closure of issues that arose during the session; accompanied by a music therapist facilitator on guitar or piano; one participant (Nancy) sometimes played a drum).

Twelve, 1.5-hour, group singing sessions were held over a 10-week period.<sup>10</sup> Two of the graduate research assistants and I took turns leading the various group singing experiences. When not leading, we each provided musical and personal support for participants. The third research assistant monitored the video and audio equipment used to record the sessions (for analysis purposes) and also provided personal support to participants as needed.

Approximately four weeks after the singing group sessions ended, I again met privately with each participant. I began by presenting each individual with their copy of the CD project (described in the Results section) and asked them to choose a selection that we could listen to together. After listening, we chatted about their chosen selection—why they chose it, what they liked or did not like about it, and what they were thinking as they listened to it. Each individual then completed a form (with support from me as needed), that gathered information on: what they liked and disliked about the singing group, things that made them feel comfortable/uncomfortable, what they learned (if anything), if they would choose to participate again (if given the opportunity), and any other feedback/questions they had. These interviews were audio recorded to gather information that emerged in conversation and not captured via the form. As was the case in the pre-singing group interviews, Likert-type questions (5-point scales) were used to capture participants' attitudes on various issues (outlined previously). Four more Likert-type questions were added to help understand participants' level of comfort with the social aspect of the singing group; what they generally perceived their mood and anxiety levels to be during the singing group; and how they felt about themselves as a person (i.e., their self-esteem) during the singing group. Again, participants were asked to indicate what they liked most and least about their lives.

## Data Analysis Procedures

One of the graduate research assistants and I reviewed the audio-video recordings of the group singing sessions and created concise summary descriptions of what happened before, during, and after each singing experience—she completed five summary descriptions and I completed seven. I then reviewed all of the videos, highlighting salient points, quotes, and occurrences on the summary descriptions. I listened back to the pre and post singing group interviews, reviewed my session notes as well as qualitative data from the interview forms, and extracted relevant data (i.e., related to participants' needs, potentials, quality of life) from these sources. Using all of this material, I conducted a directed qualitative content analysis using a pre-determined coding framework wherein I gradually pared the material down to create concise descriptions of how quality of life variables appeared to manifest for participants in this singing group context. Sample quotes from participants were incorporated into these descriptions, which contained both objective observations and subjective interpretations. The coding framework was based on domain and sub-domain headings contained within a Quality of Life (QoL) Model conceptual framework developed by researchers at the University of Toronto (Raphael, Brown, & Renwick, 1999; *The Quality of Life Model*, n.d.). These domain and subdomain headings were a good fit for the present study as they were developed from a holistic biopsychosocial perspective (defined above) and

**Table 3**  
Predetermined Coding Framework for Quality of Life Domains

I. Being	II. Belonging	III. Becoming
Subdomains: Ability/potential to express who one is.	Subdomains: Connections.	Subdomains: Ways of achieving personal goals, hopes, and aspirations.
a. Physically	a. Physical environment	a. Addressing practical issues
b. Psychologically (thoughts, feelings, self-concept)	b. Social	b. Leisure (fun and enjoyment)
c. Spiritually/Culturally (values, beliefs)	c. Community	c. Personal growth (learning, adjusting to change)
d. Musically/Vocally	d. Musical/Vocal	d. Musical/Vocal growth

could be conceptualized specifically in accordance with participants' needs and potentials, as they emerged or were revealed within the singing group context.<sup>11</sup> I also added three musical sub-domain headings to this framework based upon the CoMT concept of health musicking, which suggests that there are multiple ways in which a music practice (i.e., group singing) may serve as a contextually situated health resource (Stige, 2012). See Table 3 which outlines the predetermined coding framework. As an overarching concept, QoL was defined as the ways in which participants expressed, enjoyed, and found meaning through realization of their individual and collective potentials.

QoL variables conceptualized within this framework were considered as components and potential determinants of participants' health and wellbeing within the singing group context and in their everyday lives. Research suggests that enhancing various QoL domains rather than an exclusive emphasis on symptom-focused interventions will lead to better life outcomes for Autistic persons (Jennes-Coussens, Magill-Evans & Koning, 2006; Renty, & Roeyers, 2006).

Quantitative self-report data gathered in the pre and post singing group individual interviews were analyzed using descriptive statistics and paired samples *t*-tests. Notable results (including relevant examples of individual participants' scores) were integrated into the descriptive framework, which helped to verify, broaden, and elucidate some of the qualitative results and interpretations.

### Trustworthiness

This study demonstrated credibility through the use of triangulation (i.e., multiple sources of data such as pre and post interviews and audio-visual recordings). Although member checking was not used per se (addressed further in the Discussion section), participants did have the opportunity to provide additional perspectives in the post singing group session interviews. They were also sent a summary of preliminary results via e-mail or post (according to their stated preference) and invited to respond; none did. This study contains elements of transferability via the use of thick descriptions thus potentially helping music therapists or others to readily adapt components of the singing group format, process, and results to suit other singing group contexts for Autistic adults. Dependability and confirmability were addressed through: triangulation (described above), debriefing meetings held with the three graduate music therapy research assistants and me where we discussed our collective observations about the group; I referred to session plans and notes to help audit my interpretations; and I continuously reflected upon my beliefs, values, perspectives, and assumptions (through analytic memos, professional supervision, etc.) some of which were summarized at the beginning of this paper.

**Table 4**  
Pre and Post Singing Group Mean Comparisons

Likert-Type Scale Questions	Pre Singing Group <i>M(SD)</i>	Post Singing Group <i>M(SD)</i>	Paired Samples <i>t</i> tests
How important is music to you in your daily life?	3.50(1.07)	3.75(.71)	$t(7) = 1.53, p = .17$
How do you feel about your singing voice?	3.38(.74)	3.63(.74)	$t(7) = .79, p = .45$
Overall, how comfortable do you feel in social situations?	3.57(.79)	3.43(.53)	$t(6) = .42, p = .69$ See a.
Overall, in your daily life, how do you feel about yourself as a person?	4.13(.83)	4.00(.53)	$t(7) = .55, p = .60$

Two tailed \* $p \leq .05$

Note. Each question contained a 5-point Likert scale ranging from 1 (not at all important, not at all good, not at all comfortable, not at good) to 5 (extremely important, very good, extremely comfortable, very good), respectively.

a. One participant felt unable to answer this question in both interviews

## Results

Quantitative self-report data gathered in the pre and post singing group individual interviews were analyzed using descriptive statistics. Although it is difficult to determine normality of distribution with such a small sample, visual analysis of the data generally revealed a stable center with limited variance on either side and no outliers. Paired samples *t* tests were used to compare group means on four Likert-Type scale questions that were completed by participants in the pre singing group interview and then again in the post singing group interview.<sup>12</sup> These results are presented in Table 4.

Although none of the results in table 4 are statistically significant, notable results (i.e., relevant examples of changes in individual participants' scores) were integrated into the qualitative descriptive framework presented below to help verify, broaden, and elucidate some of the qualitative results and interpretations.

Paired samples *t* tests were used to compare group means on Likert-Type scale questions that were completed by participants in the post singing group interviews. These results are presented in Table 5. The first column contains four questions that pertain to participants' experiences within the context of their daily lives whereas the third column contains four comparable questions that pertain to participants' experiences within the context of the singing group.

As indicated in Table 5, this analysis revealed that participants rated their perceived level of anxiety during the singing group as significantly lower than their perceived level of anxiety in their daily lives. The effect size (*d*) exceeded Cohen's (1988) .8 convention for a large effect. This result and other notable results (i.e., relevant examples of changes in individual participants' scores) were integrated into the qualitative descriptive framework presented below to help verify, broaden, and elucidate some of the qualitative results and interpretations.

## How Quality of Life Domains and Subdomains Manifested in this Context

Although the Quality of Life Domains and Subdomains framework was predetermined (see Table 3 and rationale outlined above), the data analysis process was inductive in that each Subdomain was conceptualized specifically in accordance with participants' needs and potentials, as they emerged or were revealed within the singing group context.

**Table 5**  
Post Singing Group Mean Comparisons

Likert-Type Scale Questions	M(SD)	Likert-Type Scale Questions	M(SD)	Paired samples t-tests
Overall, how comfortable do you feel in social situations?	3.00(1.31) See a.	Overall, after the first few sessions, how comfortable did you feel about being with others during the singing group?	3.38(.52)	$t(7) = .81, p = .44$
Overall, in your daily life, would you say that: I am not anxious...I am extremely anxious	2.13(.64)	Overall, during the singing group would you say that: I was not anxious...I was extremely anxious	1.50(.76)	$t(7) = 2.38, p = .049^*, d = .83$
Overall, in your daily life, would you say that your mood is not at all good...very good	4.00(.53)	Overall, during the singing group, did you feel that your mood was not at all good...very good	4.38(.74)	$t(7) = 1.00, p = .35$
Overall, in your daily life, how do you feel about yourself as a person?	4.00(.53)	Overall, during the singing group, how did you feel about yourself?	4.25(.71)	$t(7) = 1.53, p = .17$

Two tailed \* $p \leq .05$

Note. Each question contained a 5-point Likert scale ranging from 1 (not at all comfortable, not anxious, not at all good, not at all good) to 5 (extremely comfortable, extremely anxious, very good, very good), respectively.

a. In this calculation, a score of 0 was ascribed to the participant who was unable to answer this question.

### Domain I: Being (expressing who one is)

**Subdomain Ia: Physical Being.** During body, breath, and vocal warm ups, all participants demonstrated intentional body awareness (e.g., placing hands on diaphragm/ribcage when vocalizing/deep breathing, participation in facial massage, etc.) as well as improved posture (sitting and standing) immediately before and during singing experiences (with verbal and gestural prompts from the music therapists). Participants used a wide variety of hand gestures and body movements to express themselves before, during, and after singing experiences. These included: spontaneous dancing/moving to music, fist pumps, pointing, jazz hands, clapping, thumbs up sign, whistling, body rocking, swaying while singing (standing position), hand flapping, and *emotive* hand gestures. Ted explained to the group that gesturing while singing “helps you get into the role. It’s like method acting.” Participants enjoyed action songs/warm ups that contained pre-determined/modelled movements (e.g., YMCA) and creative body and breathe warm ups (e.g., picking apples, hula hooping, hissing like a snake). While singing, they often spontaneously initiated actions/gestures that reflected song lyrics/stylistic components (e.g., the “Monsignore” vocal warm up, “The Twist,” “Leaving on a Jet Plane”, Sean hugged himself when the group sang *I just need somebody to love*<sup>13</sup>). For some participants, body movements and gestures may have eased their anxiety and helped them to self-regulate. Participants exhibited enhanced physical coordination by clapping, foot tapping/stomping, patting their laps, finger snapping, and hand drumming, in time with the music, a skill that improved and was expressed more liberally over time. Some noted that the group helped them to feel good (e.g., Gabriel: “Even after a long day, the singing group made me feel relaxed”).

**Subdomain Ib: Psychological Being.** Participants indicated that they felt good about/proud of their individual vocal contributions. After rehearsing his solo part in “Hit Me with Your Best Shot”, River exclaimed: “I feel like that was my best!” When

listening back to recordings of their vocal solos, Dylan said: “I smiled all the way through!” Ted nodded his head, smiled, and commented: “It wasn’t perfect but it wasn’t embarrassingly bad.” After the first successful completion of her French vocal solo in “Beauty and the Beast,” Clare gave one of the music therapists a high five and a huge smile. Participants also expressed a sense of accomplishment after group performances. Following a rousing rendition of “We Will Rock You”, River announced: “We are in the zone!” After working together to learn the intricacies of various parts of “The Twist” and then recording a formidable rendition of the arrangement, both Ted and Sean exclaimed: “Good job everyone!” Between singing experiences, participants also had opportunities to share knowledge, opinions, or advice (e.g., song preferences, music and other trivia, input into how a song should be performed, personal experiences/beliefs, etc.).

These experiences and opportunities may have enhanced aspects of individuals’ psychological well-being during the singing group, specifically in terms of self-esteem, mood, and level of anxiety. It is interesting to note that two individuals (Clare and River) indicated on the post singing group Likert-type scale questions (see Table 5) that they felt better about themselves during the group—5 (very good) as compared to their daily lives 4 (good). There were no differences between these two measures for other participants, although Ted stated in the post singing group interview that “the group helped my self-esteem.”

Nancy, River, and Harold indicated on the post singing group Likert-type scale questions (see Table 5) that their overall mood in everyday life was 4 (good) and that their overall mood during the singing group was 5 (very good). Ted indicated that his overall mood in everyday life was 3 (okay) and that his overall mood during the group was 5 (very good). In the post singing group interview he said:

I would definitely participate in this group again if I had the opportunity because it gave me the chance to express myself which I was unable to do during my teenage years, which were pretty dark. The group gave me a chance to feel better and to feel more alive.

Gabriel and Dylan both rated their overall mood in everyday life as 4 (good) and 5 (very good), (respectively) and their overall mood during the group as 3 (okay) and 4 (good), (respectively). There are no clear explanations for this finding but important to note nonetheless. Although River rated his mood as 4 (good) in both contexts, he also stated that after singing the song “Unforgettable” he was able to “release a long day’s work and negativity that nobody needs.”

The statistical analysis revealed that the group mean level of anxiety experienced during the singing group was significantly lower than the group mean level of anxiety experienced in their daily lives (see Table 5). This finding is further supported by Harold’s statement: “I wasn’t really anxious at all in the group. I do get anxious sometimes but not here.” Two participants’ individual scores however, contradicted the overall group result. Sean indicated that he was 1 (not anxious) in either context. Clare indicated that she felt 2 (slightly anxious) in her daily life whereas she felt 3 (moderately anxious) during the singing group. In the post singing group interview, Clare indicated that she is more comfortable when she is “in charge and giving the orders”, which may help to explain this individual result.

**Subdomain Ic: Spiritual/Cultural Being.** Participants spoke about ways in which the singing group experiences helped them to express and connect with their spirituality. Ted: “I really felt like I was expressing myself when I sang Hail to the Hammer and connected to my spiritual beliefs. It was elevating and grounding at the same time.” River: “Singing is a way to feel alive. Music is like religion; a set of beliefs. I was certainly invested in this. It’s like trying to get in tune with yourself and seeing where it leads”. On one occasion, Ted explained to the group that “when you get goosebumps, it means you are feeling the music in your soul.”

Although the group facilitators had begun to consider the concept of making a group CD, the idea was actually put forth to the group in the third session by Sean: “It would be fun to do a recording of ourselves.” Participants agreed that this was a good idea.

**Table 6**  
The Group CD Project

Selections	Key Features/Participants' Contributions*
Selected vocal warm-ups/traditional rounds.	Examples selected from sessions. All unfamiliar material learned by participants in the singing group.
Hail to the Hammer (2002, Tyr). Folk heavy metal. Inspired by Tyr's original recording.	Aligned with Ted's musical preferences and Pagan beliefs. He was the vocal soloist with support provided by the group via a repetitive drone type vocal ostinato. The whole group also sang the bridge and the last line.
Beauty and the Beast/ <i>La Belle et la Bête</i> . (1991, Celine Dion and Peabo Bryson).	Aligned with Clare's preference for Disney music. She sang two solo parts in French (at her request) while the group sang a supportive background part on ooh. The whole group sang remaining lyrics in English. Sean indicated that he liked both the movie and musical; offered to wear his "Beauty and the Beast" t-shirt to the group. Nancy played cymbal with brushes throughout and ended the song with a gentle glissando on the hanging chimes.
In the Summertime (1970, Ray Dorset). Inspired by Mungo Jerry's performance.	Requested by Dylan because "It's a happy song" and it aligned with his preference for "old pop." He was the vocal soloist with support provided by the group via a continuous rhythmic ostinato using nonsense syllables (Chh chh-chh uh). The whole group sang the bridge section.
Hit Me with Your Best Shot (1980, Edie Schwartz). Inspired by Pat Benatar's performance.	Aligned with River's preference for 1980's rock performed by female artists. Enjoyed posing with the microphone in front of the group. He was the vocal soloist for all verses. The whole group sang the chorus and often danced/moved throughout the song.
We Will Rock You (1977, Brian May). Inspired by Queen's performance.	Introduced in first session; became a group favorite. Two versions: one with hand clapping and one with drums. Gabriel (with facilitator) counted everyone in to set the tempo. Females and males alternated verses, with everyone on the chorus. Harold emphatically interjected "Sing it!" and "Everybody!" at designated spots. Group vocal glissando on the last note.
The Twist (1960, Hank Ballard). Inspired by Chubby Checker's performance.	Requested by Harold who liked to twist while singing this song. He and River sang the backup parts. The rest of the group sang the principal part. During a rehearsal, Clare gestured and sang two lines louder than everyone else. Gabriel indicated that he liked this so it was incorporated into the arrangement. Various individuals twisted/moved periodically throughout the song.
Unforgettable (1951, Irving Gordon). Inspired by Nat King Cole's performance.	Requested by River. Seemed to have personal meaning for him although he did not share what that was. The whole group sang a gentle version of this song, with River, Harold, and Dylan echoing some lines. Sean vocally emphasized the word "incredible." The group ended by building a vocalized 3-note chord and Nancy playing a gentle glissando on the hanging chimes.

\*Note. Dylan was studying photography and created the cover for the CD. Important to note as this was a unique skill that he offered to contribute to this project.

In the coming weeks, musical selections for this project were chosen and arranged in collaboration with participants to reflect individuals' beliefs, values, personal qualities, skills, and preferences. See Table 6 which illustrates how these various components were realized. The CD project as a whole is being considered as a unique musical cultural mosaic (i.e., an arts-based research outcome) that emerged out of this singing group context.

**Subdomain Id: Musical/Vocal Being.** Individuals' musical contributions to the CD project (see Table 6) may also be considered as unique expressions of their musical/vocal being. The singing group context provided each participant with the possibility to discover and express their own authentic voice and develop a positive and unique musical/vocal identity. River said:

I felt comfortable in the singing group because I was allowed to express all of my vocal range, starting from the low and going to the high. That [Monsignore vocal warm up] was my favourite; how high can I go?

River often held the last note of a song much longer (and louder) than the rest of the group, especially if it ended on a high note. “That’s just me. I can’t help it.”

In both the pre and post singing group interviews, participants were asked to complete a Likert-type scale question that asked how they felt about their singing voice (see Table 4). It is interesting to note that three individuals’ scores changed on this measure. Most notably, Sean’s score increased from 3 (okay) to 5 (very good). Although one cannot be certain as to why this occurred, he indicated that he had been told prior to the group that he sings “off key.” During the group, he sometimes had trouble matching pitch. However, the music therapist facilitators did not correct him but rather encouraged him to develop and express his own unique vocal sound. Over time, his level of active singing participation increased and he even sang a solo in “The Banana Boat Song (Day-O)” where the group provided background vocal support. In the post singing group interview he stated: “What I liked least about the group is that it ended because I want to sing more, more, more!” On this same measure, Dylan’s score increased from 3 (okay) to 4 (good), perhaps due at least in part to having a positive experience when rehearsing and recording his vocal solo for the CD project (“In the Summertime”). Conversely, River’s score decreased from 5 (very good) to 4 (good). This may have been due to the fact that he was quite taken aback by what he heard when listening to a recording of his voice in session 11. When asked in the post singing group interview what he liked least about the group he replied: “Hearing my voice on recording. It’s a work in progress, not the end.” Potential implications of this finding are addressed in the Discussion section.

## Domain II: Belonging (connections)

**Subdomain IIa: Physical Environment.** Due to a lack of available space at the university, the singing group was held in a room that was in somewhat of a state of disrepair. Just prior to the first session, the building had flooded and our room had an ongoing ceiling leak under which a large blue plastic recycling bin had been placed. Participants acclimatized to and even claimed ownership of this space by jokingly referring to this set up as our *Tranquility Fountain*. Participants sat in a semi-circle, facing the facilitators and a piano with the *fountain* behind them, looking back periodically to check and comment upon the rate of flow. It remained as a permanent, jokingly admired fixture for the duration of the group.

**Subdomain IIb: Social Belonging.** In both the pre and post singing group interviews, individual participants were asked to indicate on a Likert-type scale question how comfortable they felt in social situations in general (see Table 4). It is interesting to note that three participants’ scores decreased slightly on this measure. Sean and Harold moved from 4 (very comfortable) to 3 (moderately comfortable) and Dylan moved from 5 (extremely comfortable) to 4 (very comfortable). Conversely, Clare and Nancy’s scores increased from 3 (moderately comfortable) to 4 (very comfortable). Gabriel and River’s scores remained stable at 3 (moderately comfortable). Ted was unable to answer this question as he felt that the social situation needed to be contextualized. Other participants raised similar concerns prior to answering this question, which suggests that results on this measure should be interpreted with caution.

In this singing group context, all of the participants developed positive, trusting relationships with one or more of the group facilitators and some (Ted, River, and Clare) explicitly indicated that this contributed to their level of comfort in the group. Relationships with the music therapists often helped to enable successful participation and increase constructive interactions among group members, which reinforced a sense of belonging. For example, one of the RA music therapists sat by Clare whenever she sang her French solo in “Beauty and the Beast.” Clare clearly stated that she did not want anyone else to sing the solo part with her but while singing, she would look at the RA music therapist for reassurance (a nod or a smile) and upon finishing her part, would seek validation from her that she had done a good job (e.g., ask her, put up her hand

for a high five). The first time Clare made it through the entire song without having to stop, the group erupted into a spontaneous and enthusiastic round of applause.

Some participants (Nancy, Sean, Harold, and Clare) indicated that they previously knew some of the group members and that this helped them to feel more comfortable in the group. Participants expressed concern when one of the participants (River) was uncharacteristically late and when one of the RA music therapists missed the group because she was ill.<sup>14</sup> Between singing experiences, participants often offered compliments and advice to one another. For example, Ted told River after an enthusiastic song performance that: "You're really good at diffusing energy. You managed to help my anxiety." River raised his arms and responded with an enthusiastic "Wahoo!" When Gabriel and Harold were telling Nancy how she should play the chimes in a particular selection, Ted politely interjected and said "let her do it the way she wants to."

In the post singing group interviews, participants were presented with their personal copy of the group CD and asked to choose one selection that we could listen to together. Nancy and Gabriel indicated that they wanted to hear specific participants' vocal solos (River in "Hit Me with your Best Shot" and Clare in "Beauty and the Beast," respectively). When asked why they chose these selections Nancy answered: "Because I like River's singing;" Gabriel answered: "I wanted to hear which of the versions had Clare's French parts." Perhaps they each felt a special connection with that person. Some participants also commented on the constructive social (i.e., extramusical) interactions of the group as a whole. Sean: "I liked that we got along so well." Harold: "It helped that no one member tried to be the boss and tell us how a song should go." Nancy indicated that she would participate in this group again if given the opportunity because "it was fun and I enjoyed being with others."

Finally, in the post singing group interviews, participants completed a Likert-type scale question that asked how comfortable they felt being with others in the singing group after the first few sessions. This measure was compared with the group's post session interview mean score on how comfortable they felt in social situations in general (see Table 5). It is interesting to note that Nancy and Dylan's scores indicated that they were 3 (moderately comfortable) being with others in the singing group as compared to 4 (very comfortable) in social situations in general. Conversely, Sean and Harold's scores indicated the exact opposite result. All other participants' scores were stable across these two measures with the exception of Ted who was able to answer that he felt 3 (moderately comfortable) in this singing group context. As noted above, some participants had difficulty answering questions about decontextualized social situations at large, and these results should again be interpreted with caution.

**Subdomain IIc: Community Belonging.** This singing group did not engage directly with the community at large. It is important to note however, that it occurred in a university setting that hosts various public events, which made it feel more like a community group rather than a clinical initiative. During informal discussions (before and after the group) as well as between songs (participants sometimes started talking during transitions between singing experiences) participants shared information with each other about various community events, including those related to autism awareness, implying that some participants felt a sense of connection with the larger Autistic community. For example in session ten, when the music therapists were changing the recording set up between two songs, Sean asked the group: "Did you guys know that there's an Asperger's walk this weekend? ... On Saturday." When asked during the post singing group interview if he would like to participate in another singing group should the opportunity arise, Sean indicated: "I would like to learn how to use the sound system and do a broadcast about Asperger's." Sean and River also expressed/ implied interest in sharing the group's music with the public or participating in public singing performances (e.g., Sean asked if he could contact a local radio station about the CD project; River requested that we take pictures of him posing with a microphone as if performing for an audience). Additional ways in which future reiterations of this singing group might work to enhance reciprocal engagement between participants' and their communities are presented in the discussion section.



**Subdomain II: Musical/Vocal Belonging.** Adapted song structures, vocal, breath, and body warm ups; and the CD recording process (which inherently motivated participants to execute uninterrupted song performances) served as well-delineated yet flexible frameworks that enabled constructive musical/vocal collaboration. Transitions between singing experiences were often chaotic, with many participants wanting to speak at the same time. At a certain point River interjected: “I don’t want to be rude but could we get back to the music please?” In the video recordings, one can see and hear how a sense of group coherence was most salient and consistently maintained during the singing experiences; perhaps because it was possible for everyone to sing and listen to each other at the same time. Some participants commented on how the group, as a musical/vocal entity, came together. Sean: “I didn’t think our voices would fit but they did. I like that we sounded so good together.” Harold said:

I think that everyone enjoyed themselves and people put their best efforts into all of the songs. It helped that the skill levels of the singers were similar. I didn’t feel like I was sticking out [or have to] worry about others being better singers.

In the post singing group interview, when listening back to “Unforgettable,” River indicated that what he liked most about the recording was “voices coming together” and that he did not like places where “voices weren’t together.”

The CD project provided the group with a shared musical purpose. Participants provided musical/vocal support to each other and also had opportunities to feel supported in this way. Dylan: “I liked [having] the ch ch ch [vocal sounds] in the background while I sang.” Clare noticed when the group did not sing their background part as loudly as she would have liked to support her vocal solo: “What happened to my oohs everyone? What am I, chopped liver?” When Dylan realized that he had a scheduling conflict and would not be able to attend the last session, he sought out reassurance from me that his vocal solo would still be included on the CD. As noted above, in the post singing group interviews, participants were presented with their copy of the CD and asked to choose one song that we could listen to together. Ted and Harold each chose a particular song stating that they wanted to hear the whole group singing together (“We will Rock You” and “Unforgettable,” respectively). The CD itself provided concrete evidence (i.e., a memento) that participants had belonged to this singing group and had contributed to this collaborative musical outcome. Sean felt that this project provided the group with a “clear purpose” and that this helped him to feel more comfortable/at ease.

### Domain III: Becoming (Ways of achieving personal goals, hopes, and aspirations)

**Subdomain IIIa: Addressing Practical Issues.** Participants demonstrated commitment and motivation through consistent attendance and willingness to participate. Ted indicated that he sometimes attended even when he did not feel like it because he knew it would be good for him. Harold appreciated the fact that we always started on time. Participants took care to keep hydrated during the group (we set up a water station in the room) and eat dinner before they arrived. They were interested in understanding the practical applications of the various vocal, breathing, and body warm ups. Practical supports such as ear plugs (Gabriel), leaving the room and “tuning out” for a bit (Ted), and sitting with a facilitator (Clare) appeared to ease these participants’ anxiety and help them to self-regulate, which in turn enabled them to realize their potentials in the group.

**Subdomain IIIb: Leisure.** All participants indicated that they “enjoyed” or “had fun” in the group. Every session contained a great deal of laughter and humor—especially during the improvisatory components of the vocal, breath, and body warm ups and opening songs. For example, after a call and response exercise where I played with the timbre, tempo, and volume of my voice, Gabriel held his sides saying “I can’t take it,” laughing so hard that he had to sit down, which caused everyone else to laugh with

him. Ted said: "The group was fun. I could express myself and feel better. It helped me to feel more alive." As we were wrapping up the final singing group session Harold said:

It's been fun. It [time] flew. We'll do it again. In the post singing group interview he reiterated: I enjoyed singing with people. It was fun and a change of routine. It was a relaxed atmosphere and I didn't feel like I was under the gun or anything.

Seven out of eight individuals indicated that they would participate again if given the opportunity; Gabriel indicated that it would depend upon his schedule.

**Subdomain IIIc: Personal Growth.** Participants' realized personal (extramusical) potentials in various ways. Those who had vocal solos on the CD created personalized ways of assuming their leadership roles. While trying out various poses at the microphone River said: "In this kind of pose I feel like I'm on top of the world." Dylan unexpectedly donned his sunglasses just prior to a recording session of "In the Summer-time." On a few occasions he said: "Watch out American Idol. Here I come!" Gabriel (somewhat uncharacteristically) assumed a role of responsibility by agreeing to count the group in to help set the tempo for "We Will Rock You." He also appeared to become slightly more tolerant of change and spontaneity. Early on, he was quite upset when one of the RA music therapists introduced one of his song requests to the group because her acoustic version of "What Makes You Beautiful" by One Direction did not sound like their recorded version. "You got the lyrics and the whole song wrong!" Although we did not push the issue with this song, we reiterated to everyone that the point of our group was to create our own versions of songs that highlighted our unique talents. Over time, Gabriel got used to (and perhaps even liked) the group's versions of songs; as evidenced by his voluntary participation in these arrangements. He also came to really enjoy warm up songs (e.g., "Monsignore," "Boom Chicka Boom," "Ya Gotta Sing When the Spirit Says Sing"), where he would spontaneously suggest lyrics or actions and facilitator would also insert musical surprises (change of volume, tempo, vocal timbre, etc.). These songs varied from week to week and were never presented in exactly the same way.

In both the pre and post singing group interviews, individual participants were asked to indicate on a Likert-type scale question how they felt about themselves as a person in their daily lives (see Table 4). It is interesting to note that Ted showed an increase on this measure moving from 3 (okay) to 4 (good), while Nancy and Harold showed a decrease on the measure moving from 5 (very good) to 4 (good). Although participants exhibited personal growth in the singing group context, the extent to which this affected their perceptions of themselves outside of the group is difficult to say. However, when I asked River, if there was anything that he learned from the group that he would bring into his daily life, he responded: "Don't be afraid of change...Try something you've never tried before."

**Subdomain IIIId: Musical/Vocal Growth.** All participants did sing but some more than others. In reviewing the video, it appeared that the level of active singing participation notably increased for Nancy, Sean, and Clare, who sang very little/sporadically in the initial sessions. Nancy also sang quite softly for the duration of the singing group period. As previously noted, the Likert-type scale questions indicated that Nancy and Clare did not feel any differently about their voices after the singing group (3 [okay] and 4 [good] respectively). However, Sean's score increased from 3 (okay) to 5 (very good) which seems relevant to consider (as previously discussed). In both the pre and post singing group interviews, individual participants were asked to indicate on a Likert-type scale question how important music was in their daily lives (see Table 4). It is interesting to note that two participants (Harold and Clare) showed a slight increase on this measure, both going from 2 (not important) to 3 (moderately important). Given that both of these individuals indicated that they would participate in this group again (if given the opportunity), the amount of positive verbal feedback given by Harold (several examples throughout this paper), and the fact that both indicated

in their pre-singing group interviews that they “rarely listened to music” (see Table 2), this finding seems quite pertinent.

Participants may also have experienced a heightened sense of musical/vocal competency through the development of intuitive and concrete knowledge and skills. With support from the facilitators, participants demonstrated a growing ability to match pitch and sing harmonies (3-part chords and memorized rounds); follow diverse conducting cues, and maintain a rhythmic ostinato with drums (“We Will Rock You”) and voice (“Hail to the Hammer” used a repetitive drone type vocal ostinato). They asked questions about music. River: “Does anyone know what an ostinato is?” Dylan: “Is there a word for silly words [in a song] that don’t mean anything?” Gabriel: “What key is that song in?” Clare: “Are the notes the same for both [piano and guitar]? I’m just curious.” They offered constructive critiques, suggestions, or requests which indicated that they were listening. After accompanying Ted’s solo with a drum Nancy indicated: “Me and him weren’t together.” After doing a run through of “Hail to the Hammer” Ted suggested: “It’s a little slower than I’m used to. Let’s speed it up a little.” On another occasion he said: the end of the fourth line is a little higher and then proceeded to sing it for me so I could provide better musical support to him and the others as I conducted from the piano. As sessions progressed, Gabriel began to request changes to musical components of the warm ups: “Can we do it [“Monsignore” vocal exercise] staccato?” Then, after we fulfilled his request: “Let’s do it with deep, loud voices.” In the post singing group session interview, Clare requested: “If we have another group, I’d like to do another solo in French or Italian. Let me know if something comes up.”

Active participation in diverse vocal experiences revealed potential for expansion of personal music preferences. Participants learned new songs (familiar and unfamiliar) and also learned (and appeared to enjoy singing) songs that did not align with their stated music preferences. In our post singing group interview, Harold said:

At first, I didn’t think we would be able to do a song like Hail to the Hammer properly. It’s also not the kind of music I like. I got used to it and when I listened to it on YouTube, we did a better job than I thought we could. I learned that not all heavy metal is bad.

Finally, in the post group singing session interviews, some participants indicated potential for change in how they viewed the act of singing and the use singing in their daily lives. Dylan: “When I get nervous, I am going to try singing and breathing exercises.” Nancy: “I hope to sing more.” Ted: “I will use music more to help with my mood.” In addition to having selected vocal warm ups on the CD, participants were given a handout containing descriptions of various exercises that we used in the singing group in the event that they wanted to try these on their own.

## Discussion

The purpose of this mixed methods exploratory research was to investigate how quality of life variables (considered as components and determinants of health and wellbeing) might manifest (or not) for eight Autistic adults who participated in a limited term CoMT singing group. The results illustrate how subdomains contained within the overarching QoL domains of Being, Belonging, and Becoming were realized by these participants. The purpose of the discussion section is to make links between this study and relevant literature as well as present potential implications of the process and results for practice and research. Limitations of this study are also identified.

## Benefits of Group Singing

Prior to the present study, no research had been conducted on the potential benefits of group singing for Autistic adults. The process and results of the present inquiry indicate that these participants realized a range of QoL benefits, some of which are similar to those previously identified for the general adult population at large. These included observed and reported instances of: enhanced posture and voice quality (Clift &

Hancox, 2001; Subdomains I a., d., & III d.); reduced feelings of stress/anxiety (Judd & Pooley, 2014; Linnemann, Schnersch, & Nater, 2017; Subdomain I b.); increased feelings of relaxation and heightened feelings of energy (Livesay et al., 2012; Mellor, 2013; Vaillancourt et al., 2018; Subdomains I a. & b.); new learning (Livesay et al. 2012; Subdomains III c. & d.); enhanced self-awareness (Mellor, 2013; Subdomains I a., b., c., & d.); meaningful social and musical connections made with others (Faulkner & Davidson, 2006; Stewart & Lonsdale, 2016; Vaillancourt et al., 2018; Subdomains II b. & d.); feelings of belonging (Judd & Pooley, 2014; Livesay et al., 2012; Mellor, 2013; Stewart & Lonsdale, 2016; Subdomains II b., c., & d.); enhanced feelings of self-confidence, self-esteem, personal growth, and accomplishment (Busch & Gick, 2012; Livesay et al., 2012; Vaillancourt et al., 2018; Subdomains I b., III c., & d.). Additionally, participants expressed pleasure and excitement when they felt that they sounded good (Subdomains I b., d., III. b., and d.).

Although needs of Autistic adults are unique to their circumstances and context and keeping the neurodiversity stance of this paper in mind, it is important to note that benefits of group singing experienced by the participants in this study overlapped with some benefits experienced by other adult cohorts who may face similar challenges (e.g., anxiety, social isolation, social stigma, etc.) albeit for different reasons. For example, previous research (Dassa & Amir, 2014; Lesta & Petocz, 2006) indicates that group singing in music therapy contexts has helped persons living with dementia to experience: feelings of accomplishment (Subdomains I b., III c., & d.) and belonging (Subdomains II b. & d.); enhanced social and musical interactions (Subdomains II b. & d.); reduced feelings of anxiety (Subdomain I b.); and enhanced feelings self-esteem and improved mood (Subdomain I b.). It is beyond the scope of this paper to compare and contrast the results of the present study with all studies that examine the benefits of group singing in clinical or CoMT contexts for the wide range of implicated adult cohorts. However, future studies could make these types of detailed comparisons which in turn, could aid in the formulation of population and context specific singing, health, and well-being best practice guidelines. A model of voicework in music therapy proposed by Baker and Uhlig (2011), does not explicitly include a CoMT philosophical orientation, and these guidelines could also contribute to further development of that model. Best practice guidelines on how to facilitate CoMT singing groups for Autistic adults (developed through further research) could also partially address the identified need for more training in music therapy service provision for these individuals (Kern, Rivera, Chandler, & Humpal, 2013).

Group singing appeared to have multiple benefits for the participants in this study that fulfilled and went beyond their original motivations for joining the singing group (see Table 2). Some participants also asked questions about how they could improve their singing skills and seemed to appreciate vocal tips. Although we did incorporate some aspects of vocal improvisation into the group (in the warm ups and opening songs), it would be interesting to explore in subsequent research how participants' unique vocal expressions might be further developed within a wider range of improvisatory and compositional frameworks, and better understand what the associated benefits or contraindications might be.

In future reiterations of this singing group, individualized vocal coaching sessions and a broader spectrum of singing experiences might help some participants to further realize their unique vocal potentials (in traditional and non-traditional ways), which in turn could contribute to the overall creative energy and musical aesthetic of the group. From both practical (Subdomain III a.) and intrapersonal (Subdomain I b.) perspectives, literature suggests that increased vocal strength and flexibility has potential to enhance one's feelings of control and sense of identity (Warnlock, 2011). It should also be noted however, that increased awareness of how one's own voice actually sounds can be quite surprising or even upsetting, as was the case for River when he heard a recording of his vocal solo (which incidentally, sounded fine to the music therapists). Although we were able to work through this issue, this potential sensitivity must be kept in mind when doing voicework with individuals whose sense of self may be some-

what fragile due to life experiences (previous and ongoing) of feeling unaccepted or like they do not belong.

### Considerations Pertaining to Singing and Performance

There are additional factors pertaining to singing and performance that must be considered. Given the exploratory nature of the research and the short duration of the singing group, this project did not include a public performance component, which within a CoMT approach, may serve as a platform for promoting equal rights and social justice (Vaillancourt, 2012). Public performance as a vehicle for self-advocacy, empowerment, creative self-expression, community connection, and public education is a central component of the Sensory Friendly Concerts (SFCs) initiative (described previously and discussed further below; Shiloh & Lagasse, 2014). Brandalise (2015) illustrated how incorporating theatre performance into a CoMT approach helped to meet the psychological, cultural, and social needs of a group of young Autistic adults (aligns with Subdomains I b., c., & II b., respectively). Some participants in the present study (River and Sean) expressed a desire to perform and future singing groups for Autistic adults could consider this option. However, having been involved in various types of CoMT singing groups (e.g., Young, 2009; Young & Pringle, 2018), it has been my experience that some individuals benefit first and foremost from participation in the group singing experience in and of itself and do not necessarily want to perform in a public forum. These individuals need access to group singing contexts where participation in performance is not required. Additionally, there are situations where vocal performance may be contraindicated (e.g., the amount of anxiety elicited negates potential benefits; Young & Nicol, 2011). Finally, in a study that examined negative experiences of amateur choral society members, Kreutz & Br unger(2012) found that perceived demands of public performance lead some individuals to form negative associations with choral singing. This is an important finding to consider, especially if the fundamental purpose of a singing group is to promote feelings of well-being.

In the present study, the CD project recording process could be considered as a type of performance, wherein participants worked together to achieve uniquely tailored renditions of each selection, which they could later share with family and friends if they chose to do so (Subdomains II b. & c.). This type of project (which emerged out of the group process and was not pre-planned) could serve as a viable alternative for or adjunct to community/public performance depending upon the individual and collective needs or goals of a particular singing group.

### Community Music Therapy and Neurodiversity

This research was motivated in part by my belief that a singing group conceptualized within a CoMT approach could provide Autistic adults with a creative and supportive forum wherein individual neurodiverse participants could realize their unique potentials. As this belief aligns with the philosophy of Sensory Friendly Concerts (SFCs; Musical Autist/About, 2018; Shiloh & Lagasse, 2014), it is relevant to highlight similarities and distinctions between these two initiatives. It is also important to note that the identified distinctions are not contradictions but rather different ways in which the subdomains contained in the present study's QoL framework may be realized and supported.

Like SFCs, we made accommodations to support the sensory needs of our participants (see Table 3; also aligns with Subdomain III a.). Although we did not have access to noise cancelling headphones/ear buds<sup>15</sup> (which I would definitely use in the future), our participants did have access to foam ear plugs, which one participant (Gabriel) used regularly. If anyone became overwhelmed or overly anxious, it was understood that they could leave the room and sit quietly in an adjacent room until they felt ready to return (SFCs have a designated sensory calm room). One of our group facilitators would accompany that person and check on them as needed; and provide musical and personal support when they returned. For very valid reasons (e.g., auditory processing

disorders/sensitivities, loud, startling sounds; disconcerting effects of surround sound, etc.), SFCs do not use a house Public Address (PA) system. However, in this research project, we did use a microphone attached to a speaker (via a soundboard) for individuals who performed solos or other special parts on the group CD project. For some, singing into and holding a microphone appeared to be an empowering experience (as evidenced by body stance, gestures, facial expressions, comments, etc.; Subdomains I a., b., c., & d.), and it was very helpful for participants with soft voices who wanted to sing and record a solo part (Subdomain III a.). It also enhanced group awareness (i.e., group members watched and listened to the soloist more intently; Subdomains II b. & d.) and clarified musical roles (i.e., created an inherent structure wherein soloists and backup singers naturally assumed these roles; Subdomains I d. & II d.). The music therapist leading particular rehearsal/recording activities sometimes wore a headset microphone to provide vocal support/direction as needed for both group and solo parts. We did have one incident where feedback from our amplification system greatly startled Clare who was rehearsing a vocal solo for the CD recording. Although the group members demonstrated notably enhanced musical and personal support (Subdomains II b. & d.) toward her as a result of this incident (their previous interactions with her had been somewhat limited/strained), it also clearly demonstrated potential contraindications for use of amplification. I recommend considering this issue with great care and caution, taking the needs of each group and individual as well as the particularities of each singing group context into account. It is also very important that the intricacies of the equipment be well understood, if it is to be used.

Like the SFCs initiative, this research singing group context also provided “a safe and understanding environment where different responses to music [were] respected” (Shiloh & Lagasse, 2014, p. 118). Behaviours such as hand flapping, rocking, or spontaneous vocalizations were not discouraged. Improvised dancing, moving to music, or walking around were considered as natural forms of musical and self-expression (Subdomains I a., b., c., & d.). Songs for the CD project were arranged to showcase the unique musical, personal, and cultural expressions, strengths, and preferences of individual participants (also see Tables 2 & 6).

Unlike SFCs, we did not integrate community musicians into our group. The four certified music therapists involved in the project (three certified music therapist graduate research assistants and I) provided both musical and personal support. Musically, we brought a range of clinical and performance skills (including vocal knowledge and experience) to the project which helped us to accommodate traditional and non-traditional aesthetic needs and potentials of participants. Our therapy training and experience helped us to understand and navigate complex group processes and individual challenges that emerged as well as provide individualized support to help promote the realization of unique personal resources. However, this does not preclude the inclusion of community musicians in future reiterations of singing groups for Autistic adults. This could potentially expand the scope of music experiences offered (i.e., unique genres, instruments, vocal approaches, languages, etc.; aligns with Subdomains I c., d., & III d.), enhance individuals’ understandings about autism, and strengthen reciprocal connections between community members and Autistic culture (Subdomains II c. & d.)

Although I did have a few brief interactions with parents/other caregivers (via phone, e-mail, or in person) they did not observe sessions nor were they invited to be part of the singing group as they are at SFC gatherings. Initially, this decision was made for two reasons: (a) to have a clearly defined group of research participants (i.e., include verbal Autistic adults only), and (b) an identified lack of programming that catered specifically to the needs of Autistic adults. Research has indicated that difficult transitions from supportive youth services to limited or no services for adults has left young Autistic adults and their families feeling concerned about their potential to live a meaningful life (Milen & Nicholas, 2017). This small singing group consisted of eight diverse individuals who had experienced social isolation and stigma because of their autism, even though (and sometimes because) they had caregivers who had tried to protect them. Throughout the research process, participants implicitly and explicitly

indicated their desire to live their own lives and find their own way (Subdomains III a., b., c., & d.). For this particular age cohort (and perhaps for older Autistic adults), this type of delimited singing group format may serve as an empowering forum or transitional space where Autistic individuals can discover, accept, and celebrate unique aspects of themselves. The inclusion of caregivers (and others) as part of a singing group format would potentially have other benefits. For example, parents and caregivers who participate in the SFCs initiative experience an environment where autistic behaviours are accepted as the norm, they learn about neurodiversity, and they are able relax and enjoy the music at whatever level they desire to participate (Shiloh & Lagasse, 2014). Possible benefits of singing groups that include parents/caregivers/others as well as the potential for adaptation/modification of relevant components of existing inclusive community chorus models (e.g., Carpenter, 2015) should be further explored in future research.

As previously noted, research suggests that enhancing various QoL domains rather than an exclusive emphasis on symptom-focused interventions will lead to better life outcomes for Autistic persons (Jennes-Coussens, Magill-Evans & Koning, 2006; Renty, & Roeyers, 2006). The research process and results of the present study further reinforce this position and also indicate that a singing group conceptualized within a CoMT philosophical approach may serve as a forum for empowerment and self-actualization on individual and collective levels. However, more research is needed to understand various ways in which singing groups might be conceptualized for Autistic adults and what the contextually specific complexities and benefits might be. For example, *aging well* is becoming an increasingly popular concept in society yet there is limited research and knowledge on what this means for Autistic adults. In a qualitative interview study conducted with 15 Autistic adults and 9 carers of Autistic adults that explored this concept, Hwang, Foley, and Trollor (2017) found that being autistic was not viewed as a hindrance (i.e., aligned with a strengths-based, neurodiversity perspective) but that participants identified social and relational issues (Subdomain II b.) as well as societal attitudes (Subdomains II c.) as unique and key factors to aging well. Future inquiries could explore how these (and other) issues might be addressed via a CoMT singing group context for aging Autistic adults.

Autistic self-advocates do not support the traditional biomedical cure research agenda for autism and instead believe that research priorities should focus on areas that have the most potential to improve the daily lives of Autistic people (ASAN, 2018a). Music therapist researchers (in collaboration with a range of relevant stakeholders) need to find ways to legitimate QoL music therapy practices and produce accessible and practical findings without utilizing research methodologies that contribute to the disempowerment of participants (Metell, 2014). Throughout this research process, I became more consciously aware of how aspects of the biomedical model were subtly influencing what I considered to be my humanistic client/music centered therapy approach. Both music therapy students and professionals need to develop skills and understanding on how to navigate the current systemic realities of employment contexts without inadvertently contributing to the disempowerment and over-pathologization of their clients. This issue could be more consistently and directly addressed within the context of music therapy training programs, continuing education, and professional advocacy initiatives.

## Limitations

This study has limitations that must be acknowledged. All of the participants were verbal and highly capable in various aspects of their lives. Therefore, the research process, results, and implications may have limited applicability to Autistic persons who are non-verbal and whose challenges and strengths manifest in other ways. Additional research that explores how various individuals on the autism spectrum might realize their potential for wellbeing through musical self-expression (vocally or otherwise) is warranted.

Although I am able to share audio recordings of the group within presentation contexts, I unfortunately did not obtain participants' consent to include audio excerpts in any related publications. In some instances, one can hear how particular subdomains contained within the overarching QoL domains are reflected in various singing experiences. These audio excerpts would have served to further validate the findings and well as provide concrete, practical, and thought-provoking examples for readers. Whenever possible, researchers should try and obtain permission to include audio examples in future similar research publications.

Some may view my dual role as researcher and lead group facilitator as problematic. Given the exploratory nature of this study, I felt that I needed to directly interact and develop relationships with the participants in order to identify and set aside my assumptions and make my best attempt to truly understand how QoL variables might be realized for this group in context. In the post singing group interviews (as compared to the pre singing group interviews), participants were generally more comfortable in sharing their perspectives (i.e., they talked more and were more forthcoming with their answers) because they had gotten to know me, which I believe ultimately enhanced the quality (i.e., authenticity) of the post session data.

I also decided not to use member checking. It took a long time to transcribe and analyze the data, and the passage of time may have affected participants' perspectives in such a way that could have convoluted rather than clarified the results (McConnell-Henry, Chapman, & Francis, 2011). Furthermore, in getting to know the participants, I came to believe that a member checking process could evoke unnecessary anxiety for some individuals. In future studies, it may be more useful and appropriate to include [some or all] participants and other Autistic individuals as part of the research team to ensure that key stakeholder perspectives are an integral part of the process at every stage (i.e., use a participatory action research methodology). A current study being conducted on "Music in Everyday Autistic Life" (funded by the American Music Therapy Association Fultz Award) is utilizing a 6-member, neurodiverse research team for this very reason (K. Aigen, personal communication, February 13, 2018).

Finally, the Likert-type scale questions provided concrete choices for answers and this seemed helpful for some participants (i.e., less anxiety provoking than open ended questions or conversation). Additionally, examining individual participants' quantitative data sometimes provided important information that either elucidated or validated some of the individual and group qualitative interpretations. However, some individuals expressed anxiety at having to choose an answer (that felt like it could be *wrong*) and felt that more context was needed (e.g., I am highly anxious in some social situations and not in others). Although the quantitative results have some potentially meaningful implications, they should be interpreted with caution. In future research studies, the inclusion of Likert-type scales may be most useful for the unique reasons outlined here, and their value as a measure of the general attitudes of a group of Autistic adults may be limited.

## Conclusion

The purpose of this exploratory mixed methods research was to investigate how quality of life variables (considered as components/ determinants of health and wellbeing) might manifest for eight Autistic adults who participated in a limited term CoMT singing group. Results illustrated how subdomains contained within overarching QoL domains of Being, Belonging, and Becoming were realized by the participants. The research process and results of this study may serve as a malleable framework within which other CoMT singing groups for Autistic adults may be realized in context. Additional research is needed to understand how singing groups for Autistic persons across the spectrum may serve as a vehicle for QoL and social justice as well as a means for individual and collective empowerment. I will now hand the microphone over to River for a few closing words: "Singing spells action, singing spells the truth, it's long lived.



It sets the path to remember, like the song [“Unforgettable”]. The music made new memories.”

## Acknowledgements

This work was supported by Concordia University’s Individual Seed Funding Program as well as by the Advancing Interdisciplinary Research in Singing (AIRS) Project, a Major Collaborative Research Initiative (MCRI) funded by the Social Sciences and Humanities Research Council (SSHRC) of Canada under Grant # 412-2009-1008.

The author would like to thank Concordia University’s Centre for Arts in Human Development and the West Montreal Readaptation Centre (Centre de Réadaptation de l’Ouest de Montréal) for various kinds of logistical support that they provided for this project. She would also like to thank former Concordia University Music Therapy Research Graduate Assistants Danna Da Costa, Jessica Power, and Karli Purscell. And last but definitely not least, the author would like to thank the research participants. Your voices touched my heart and continue to echo in my mind.

## About the author

Dr. Laurel Young is a certified music therapist (MTA), Psychotherapist (Québec), and Fellow of the Association for Music & Imagery (FAMI). She is an Associate Professor and Music Therapy Graduate Programs Coordinator at Concordia University in Montréal, Canada. She has over 25 years of diverse clinical experience, has lectured internationally, and has authored several book chapters and peer reviewed journal publications. She has served on the Boards of the Canadian Association of Music Therapists (CAMT) and the Canadian Music Therapy Fund (CMTF). In 2014, she received the Research & Publications award at the CAMT’s 40th annual national conference. Dr. Young is a research member of the PERFORM Centre, Concordia’s Arts in Health Research Collective (AHRC), and the Centre for Research and Expertise in Social Gerontology (CREGÉS). She currently serves as the Associate Director of engAGE: Concordia’s Centre for Research on Aging.

## Notes

1. This paper incorporates identity-first language (i.e., Autistic person rather than person with autism) as many self-advocates in the autism community understand autism as an inherent part of an individual’s identity (see Brown, L. June 19, 2018).
2. It is beyond the scope of this paper to include a comprehensive review of all literature pertaining to how singing, health, and wellbeing have been conceptualized and examined in clinical and non-clinical contexts. For more information, see systematic reviews and literature reviews by: Clark & Harding (2012); Clift (2012); Clift et al., (2016); Clift, Hancox, Staricoff, & Whitmore, (2008); Clift, Nicol, Raisbeck., Whitmore, & Morrison (2010); Gick (2011); and Stacy, Brittain, & Kerr (2002).
3. As the present study involved Autistic adults, literature pertaining to Autistic children was not included in this paper.
4. It appears that no music therapists were involved in this project. Furthermore, the music intervention employed technology, computers, and music production software rather than singing or instrument playing.
5. The publication used a bar graph that did not indicate exact percentages.
6. In a music centered approach, the music is viewed as the essential feature of the therapy. Change is accomplished in and through musical processes (Turry & Marcus, 2003).
7. In individual GIM, the client listens to specially designed recorded music programs while in a relaxed state, allows their imagination to respond, and reports their inner experiences to the therapist (Bruscia, 2002).

8. Facilitated communication (FC) is a technique where a facilitator supports the arm of a non-verbal individual so that they can express themselves through writing via an alphabet board or computer keyboard. It has generated controversy (i.e., some believe that the facilitators are guiding the writing) and has been challenged by autism researchers (Clarkson, 1995, 1998).
9. Although this paper aligns with a neurodiversity perspective and employs identity-first language, the agencies who helped with recruitment used different terminology. Furthermore, 6 of 8 participants indicated that they had Asperger's Syndrome (as opposed to autism). They identified strongly with this label and some were upset and confused by the fact that it had been removed from the *DSM-5* and subsumed under the broader label of autism spectrum disorder (ASD).
10. Due to unforeseen building repairs, we had to conduct 12 sessions within a 10-week period rather than a 12-week period as originally planned.
11. A number of QoL measurement tools have been developed using this conceptual framework. These tools were not appropriate for use in this study as none have been developed specifically for Autistic persons. Furthermore, this exploratory study was looking to conceptualize QoL variables as they emerged within this singing group context.
12. One pre singing group Likert scale question was removed from the analysis as it accidentally included two distinct concepts—anxious and depressed.
13. From the Beatles' song "I Get by with a Little Help from My Friends."
14. These group discussions were not audio recorded as they occurred just prior to the beginning of the two sessions in question. I documented these occurrences in my session notes, but I did not notate individual quotes.
15. Noise cancelling headphones or earbuds are specially designed to reduce sound and ambient noise and for some, may improve the quality of their music experiences.

## References

- Aigen, K. (2016). *Contemporary social movements in autism: Implications for music therapy research* (Unpublished manuscript). American Music Therapy Association national conference lecture notes.
- Allen, R., Hill, E.L., & Heaton, P.F. 2009. 'Hath charms to soothe ... ': An exploratory study of how high-functioning adults with ASD experience music. *Autism*, 13(1), 21-41. <https://doi.org/10.1177/1362361307098511>.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). American Psychiatric Association.
- Ansdell, G. (2002). Community music therapy and the winds of change: A discussion paper. In C. B. Kenny & B. Stige (Eds.), *Contemporary voices in music therapy: Communication, culture, and community* (pp. 109-142). Unipub Forlag.
- Ansdell, G., & Pavlicevic, M. (Eds.). (2004). *Community music therapy*. Jessica Kingsley.
- Autism Canada. (2017). *About autism: Characteristics*. <https://autismcanada.org/about-autism/characteristics/>.
- Autistic Self-Advocacy Network (ASN). (2018a). *Position statements*. <http://autisticadvocacy.org/about-asan/position-statements/>.
- Autistic Self-Advocacy Network (ASN). (2018b). *About*. <http://autisticadvocacy.org/about-asan/>.
- Autistic Self-Advocacy Network (ASN). (2018c). *About autism*. <http://autisticadvocacy.org/about-asan/about-autism/>.
- Bailey, B. A., & Davidson, J. W. (2003). Amateur group singing as a therapeutic instrument. *Nordic Journal of Music Therapy*, 12, 18-33, <https://doi.org/10.1080/08098130309478070>.

- Bailey, B. A., & Davidson, J. W. (2005). Effects of group singing and performance for marginalized and middle-class singers. *Psychology of Music*, 33, 269-303, <https://doi.org/10.1177/0305735605053734>.
- Bakan, M. B. (2014). Ethnomusicological perspectives on autism, neurodiversity, and music therapy. *Voices: A World Forum for Music Therapy*, 14(3), 1-23, <https://doi.org/10.15845/voices.v14i3.799>.
- Bakan, M. B. (2018). *Speaking for ourselves: Conversations on life, music, and autism*. Oxford University Press.
- Bannan, N., & Montgomery-Smith, C. (2008). 'Singing for the Brain': Reflections on the human capacity for music arising from a pilot study of group singing with Alzheimer's patients. *The Journal of the Royal Society for the Promotion of Health*, 128, 73-78, <https://doi.org/10.1177/1466424007087807>.
- Bergmann, T. (2018). Music therapy for people with autism spectrum disorder. In J. Edwards (Ed.), *The Oxford handbook of music therapy* (pp. 186-209). Oxford University Press.
- Bonilha, A. G., Onofre, F., Vieira, M. L., Prado, M. Y. A., & Martinez, J. A. B. (2009). Effects of singing classes on pulmonary function and quality of life of COPD patients. *International Journal of COPD*, 4, 1-8, <https://doi.org/10.2147/COPD.S4077>.
- Boso, M., Emanuele, E., Minazzi, V., Abbamonte, M., & Politi, P. (2007). Effect of long-term interactive music therapy on behavior profile and musical skills in young adults with severe autism. *The Journal of Alternative and Complementary Medicine*, 13(7), 709-712, <https://doi.org/10.1089/acm.2006.6334>.
- Brandalise, A. (2015). Music therapy and theatre: A community music therapy socio-cultural proposal for the inclusion of persons with autism spectrum disorders. *Voices: A World Forum for Music Therapy*, 15(1), <https://doi.org/10.15845/voices.v1i1.733>.
- Brown, L. (2018). *Identity-first language*. <http://autisticadvocacy.org/about-asan/identity-first-language/>.
- Bruscia, K. E. (2002). Boundaries of GIM and bonny Method. In K. Bruscia & D. Grocke (Eds.), *Guided imagery and music: The Bonny method and beyond* (pp. 37-61). Barcelona.
- Bruscia, K. E. (2014). *Defining music therapy* (3rd ed.). Barcelona.
- Buetow, S. A., Talmage, A., McCann, C., Fogg, L., & Purdy, S. (2014). Conceptualizing how group singing may enhance quality of life with Parkinson's disease. *Disability and Rehabilitation: An International, Multidisciplinary Journal*, 36(5), 430-433, <https://doi.org/10.3109/09638288.2013.793749>.
- Busch, S. L., & Gick, M. (2012). A quantitative study on choral singing and psychological well-being. *Canadian Journal of Music Therapy*, 18(1), 45-61, <https://doi.org/10.1108/17465721211207275>.
- Carpenter, S. (2015). A philosophical and practical approach to an inclusive community chorus. *International Journal of Community Music*, 8(2), 197-210, [https://doi.org/10.1386/ijcm.8.2.197\\_1](https://doi.org/10.1386/ijcm.8.2.197_1).
- Clark, I., & Harding, K. (2012). Psychosocial outcomes of active singing interventions for therapeutic purposes: A systematic review of the literature. *Nordic Journal of Music Therapy*, 21(1), 80-98, <http://dx.doi.org/10.1080/08098131.2010.545136>.
- Clarkson, G. (1991). Music therapy for a nonverbal Autistic adult. In K. Bruscia (Ed.), *Case studies in music therapy* (pp. 373-385). Barcelona.
- Clarkson, G. (1995). Adapting a guided imagery and music series for a nonverbal man with autism. *Journal of the Association for Music & Imagery*, 4, 121-138.
- Clarkson, G. (1998). *I dreamed I was normal: A music therapist's journey into the realms of autism*. MMB Music.
- Clarkson, G. (1998-1999). Spiritual insights of a G.I.M. client with Autism. *Journal of the Association for Music & Imagery*, 6, 87-103.
- Clements-Cortes, A. A. (2013). Buddy's Glee Club: Singing for life. *Activities, Adaptation & Aging*, 37(4), 273-290, <https://doi.org/10.1080/01924788.2013.845716>.

- Clift, S. (2012). Singing, wellbeing, and health. In R. A. R. MacDonald, G. Kreutz, & L. Mitchell (Eds.), *Music, health, and wellbeing* (pp. 113-124). Oxford University Press.
- Clift, S. M., & Hancox, G. (2001). The perceived benefits of singing: Findings from preliminary surveys of a university college choral society. *The Journal of the Royal Society for the Promotion of Health, 121*, 248-256, <https://doi.org/10.1177/146642400112100409>.
- Clift, S., Hancox, G., Morrison, I., Shipton, M., Page, S., Skingley, A., & Vella-Burrows, T. (2016). Group singing as a public health resource. In S. Clift & P. Camic (Eds.), *Oxford textbook of creative arts, health and wellbeing* (pp. 251-257). Oxford University Press.
- Clift, S., Hancox, G., Staricoff, R., & Whitmore, C. (2008). *Singing and health: Summary of a systematic mapping and review of non-clinical research*. Sidney De Haan Research Centre for Arts and Health.
- Clift, S. M., Nicol, J., Raisbeck, M., Whitmore, C., & Morrison, I. (2010). Group singing, wellbeing and health: A systematic mapping of research evidence. *UNESCO Refereed E-Journal, Multi-Disciplinary Research in the Arts, 2*(1), 1-25.
- Cohen, G. D., Perstein, S., Chapline, J., Kelly, J., Firth, K. M., & Simmens, S. (2006). The impact of professionally conducted cultural programs on the physical health, mental health, and social functioning of older adults. *The Gerontologist, 46*(6), 726-773, <https://doi.org/10.1093/geront/46.6.726>.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates.
- Cohen, M. L. (2007). Explorations of inmate and volunteer choral experiences in a prison-based choir. *Australian Journal of Music Education, 1*, 61-72.
- Dassa, A., & Amir, D. (2014). The role of singing familiar songs in encouraging conversation among people with middle to late stage Alzheimer's disease. *Journal of Music Therapy, 51*(2), 131-153, <https://doi.org/10.1093/jmt/thu007>.
- Di Benedetto, P., Cavazzon, M., Mondolo, F., Rugiu, G., Peratoner, A., & Biasutti, E. (2009). Voice and choral singing treatment: A new approach for speech and voice disorders in Parkinson's disease. *European Journal of Physical and Rehabilitation Medicine, 45*, 13-19.
- Engel, G. L. (1977). The need for a new medical model: A challenge for biomedicine. *Science, 196*, 129-136.
- Engen, R. (2005). The singer's breath: Implications for treatment of persons with emphysema. *Journal of Music Therapy, 42*(1), 20-48, <https://doi.org/10.1093/jmt/42.1.20>.
- Faulkner, R., & Davidson, J. W. (2006). Men in chorus: Collaboration and competition in homo-social vocal behaviour. *Psychology of Music, 34*(2), <https://doi.org/10.1177/0305735606061853>.
- Fischer, R. (1991). Original song drawings in the treatment of a developmentally disabled Autistic adult. In K. Bruscia (Ed.), *Case studies in music therapy* (pp. 359-371). Barcelona.
- Fung, C. H. M. (2009). Asperger's and musical creativity: The case of Erik Satie. *Personality and Individual Differences, 46*(8), 775-783, <https://doi.org/http://dx.doi.org/10.1016/j.paid.2009.01.019>.
- Gick, M. L. (2011). Singing, health and well-being: A health psychologist's review. *Psychomusicology: Music, Mind and Brain, 21*(1-2), 176-207, <https://doi.org/10.1037/.>
- Goodridge, D., Nicol, J. J., Horvey, K. J., & Butcher, S. (2013). Therapeutic singing as an adjunct for pulmonary rehabilitation participants with COPD: Outcomes of a feasibility study. *Music & Medicine, 5*(3), 169-176, <https://doi.org/10.1177/1943862113493012>.
- Graham, J. (2004). Communicating with the uncommunicative: Music therapy with pre-verbal adults. *British Journal of Learning Disabilities, 32*(1), 24-29, <https://doi.org/10.1111/j.1468-3156.2004.00247.x>.
- Grape, G., Theorell, T., Wikstrom, B. M., & Ekman, R. (2009). Choir singing and fibrinogen, VEGF, cholecystokinin, and motilin in IBS patients. *Medical Hypotheses, 72*(2), <https://doi.org/10.1016/j.mehy.2008.09.019>.

- Hanson, W. E., Creswell, J. W., Plano Clark, V. L., Petska, K. S., & Creswell, J. D. (2005). *Faculty Publications, Department of Psychology*. Retrieved from <http://digitalcommons.unl.edu/psychfacpub/373>.
- Hillier, A., Greher, G., Poto, N., & Dougherty, M. (2011). Positive outcomes following participation in a music intervention for adolescents and young adults on the autism spectrum. *Psychology of Music, 40*(2), 201-215, <https://doi.org/10.1177/0305735610386837>.
- Hillier, J., Kopec, J., Poto, N., Tivarus, M., & Beversdorf, D. Q. (2016). Increased physiological responsiveness to preferred music among young adults with autism spectrum disorders. *Psychology of Music, 44*(3), 481-492, <https://doi.org/10.1177/0305735615576264>.
- Hillman, S. (2002). Participatory singing for older people: A perception of benefit. *Health Education, 102*, 163-171, <https://doi.org/10.1108/09654280210434237>.
- Hooper, J., McManus, A., & McIntyre, A. (2004). Exploring the link between music therapy and sensory integration: An individual case study. *British Journal of Music Therapy, 18*(1), 15-23, <https://doi.org/10.1177/135945750401800104>.
- Hwang, Y. I., Foley, K. R., & Trollor, J. N. (2017). Aging well on the autism spectrum: The perspectives of autistic adults and carers. *International Psychogeriatrics, 29*(12), 2033-2046, <https://doi.org/10.1017/S1041610217001521>.
- Jennes-Coussens, M., Magill-Evans, J., & Koning, C. (2006). The quality of life of young men with Asperger syndrome: A brief report. *Autism, 10*, 403-414, <https://doi.org/10.1177/1362361306064432>.
- Jones, S. R. (2013). *Autistic people are...musical!*<http://www.themusicalautist.org/autistic-people-are-musical/>.
- Judd, M., & Pooley, J. A. (2014). The psychological benefits of participating in group singing for members of the general public. *Psychology of Music, 42*(2), 269-283, <https://doi.org/10.1177/0305735612471237>.
- Kaplan, R. S., & Steele, A. L. (2005). An analysis of music therapy program goals and outcomes for clients with diagnoses on the autism spectrum. *Journal of Music Therapy, 42*(1), 2-19, <https://doi.org/10.1093/jmt/42.1.2>.
- Kenny, D. T., & Faunce, G. (2004). The impact of group singing on mood, coping and perceived pain in chronic pain patients attending a multidisciplinary pain clinic. *Journal of Music Therapy, 41*, 241-258, <https://doi.org/10.1093/jmt/41.3.241>.
- Kern, P., Rivera, N. R., Chandler, A., & Humpal, M. (2013). Music therapy services for individuals with Autism Spectrum Disorder: A survey of clinical practices and training needs. *Journal of Music Therapy, 50*(4), 274-303, <https://doi.org/10.1093/jmt/50.4.274>.
- Kreutz, G., Bongard, S., Rohrmann, S., Hodapp, V., & Grebe, D. (2004). Effects of choir singing or listening on secretory immunoglobulin A, cortisol, and emotional state. *Journal of Behavioral Medicine, 27*(6), 623-635, <https://doi.org/10.1007/s10865-004-0006-9>.
- Kreutz, G., & Brünger, P. (2012). A shade of grey: Negative associations with amateur choral singing. *Arts & Health, 4*(3), 230-238, <https://doi.org/10.1080/17533015.2012.693111>.
- Lesta, B., & Petocz, P. (2006). Familiar group singing: Addressing mood and social behaviour of residents with dementia displaying sundowning. *Australian Journal of Music Therapy, 17*, 2-17, <http://www.austmta.org.au/>.
- Linnemann, A., Schnersch, A., & Nater, U. M. (2017). Testing the beneficial effects of singing in a choir on mood and stress in a longitudinal study: The role of social contacts. *Musicae Scientiae, 21*(2), 195-212, <https://doi.org/https://doi.org/10.1177/1029864917693295>.
- Livesay, L., Morrison, I., Clift, S., & Camic, P. M. (2012). Benefits of choral singing for social and mental wellbeing: Qualitative findings from a cross-national survey of choir members. *Journal of Public Mental Health, 11*, 10-27, <https://doi.org/10.1108/17465721211207275>.
- Maloney, S. T. (2006). Glenn Gould: Autistic savant. In N. Lerner & J. N. Straus (Eds.), *Sounding off: Theorizing disability in music* (pp. 121-136). Routledge.

- Mateos-Moreno, D., & Atencia-Dona, L. (2013). Effect of a combined dance/movement and music therapy on young adults diagnosed with severe autism. *The Arts in Psychotherapy*, 40, 465-472, <http://dx.doi.org/10.1016/j.aip.2013.09.004>.
- McConnell-Henry, T., Chapman, Y., & Francis, K. (2011). Member checking and Heideggerian phenomenology: A redundant component. *Nurse Researcher*, 18(2), 28-37, <https://doi.org/10.7748/nr2011.01.18.2.28.c8282>.
- McQuigge, M. (2018). Adults with autism often misunderstood and lack support. *The Canadian Press*, <http://www.cbc.ca/news/health/autism-seniors-1.4607219>.
- Mellor, L. (2013). An investigation of singing, health and well-being as a group process. *British Journal of Music Education*, 30(2), 177-205, <https://doi.org/10.1017/S0265051712000563>.
- Metell, M. (2014). Dis/abling musicking: Reflections on a disability studies perspective in music therapy. *Voices: A World Forum for Music Therapy*, 14(3), <https://doi.org/10.15845/voices.v14i3.786>.
- Milen, M. T., & Nicholas, D. B. (2017). Examining transitions from youth to adult services for young persons with autism. *Social Work in Health Care*, 56(7), 636-648, <https://doi.org/10.1080/00981389.2017.1318800>.
- Musical Autist. (2018). *About*. <http://www.themusicalautist.org/about/>.
- Pavlakou, M. (2009). Benefits of group singing for people with eating disorders: Preliminary findings from a non-clinical study. *Approaches: Music Therapy & Special Music Education*, 1(1), <http://approaches.primarymusic.gr>.
- Raphael, D., Brown, I., & Renwick, R. (1999). Psychometric properties of the full and short versions of the Quality of Life Instrument Package: Results from the Ontario province-wide study. *International Journal of Disability, Development and Education*, 46(2), 157-168, <https://doi.org/10.1080/103491299100605>.
- Renty, J. O., & Roeyers, H. (2006). Quality of life in high-functioning adults with autism spectrum disorder: The predictive value of disability and support characteristics. *Autism*, 10, 511-524, <https://doi.org/10.1177/1362361306066604>.
- Rolvjord, R. (2010). *Resource-oriented music therapy in mental health care*. Barcelona.
- Ruud, E. (2010). *Music therapy: A perspective from the humanities*. Barcelona.
- Saville, R. (2007). Music therapy and autistic spectrum disorder. In T. Watson (Ed.), *Music therapy with adults with learning disabilities* (pp. 33-46). Routledge.
- Shiloh, C. J., & Lagasse, B. A. (2014). Sensory friendly concerts: A community music therapy initiative to promote Neurodiversity. *International Journal of Community Music*, 7(1), 113-128, [https://doi.org/10.1386/ijcm.7.113\\_1](https://doi.org/10.1386/ijcm.7.113_1).
- Silber, L. (2005). Bars behind bars; the impact of a women's prison choir on social harmony. *Music Education Research*, 7(2), 251-271, <https://doi.org/10.1080/14613800500169811>.
- Skingley, A., Page, S., Clift, S., Morrison, I., Coulton, S., Treadwell, P., & Shipton, M. (2014). 'Singing for breathing': Participants' perceptions of a group singing programme for people with COPD. *Arts & Health: An International Journal of Research, Policy and Practice*, 6(1), 59-74, <https://doi.org/10.1080/17533015.2013.840853>.
- Stacy, R., Brittain, K., & Kerr, S. (2002). Singing for health: An exploration of the issues. *Health Education*, 102, 156-162, <https://doi.org/10.1108/09654280210434228>.
- Stewart, N. A. J., & Lonsdale, A. J. (2016). It's better together: The psychological benefits of singing in a choir. *Psychology of Music*, 44(6), 1240-1254, <https://doi.org/10.1177/0305735615624976>.
- Stige, B. (2002). *Culture-centered music therapy*. Barcelona.
- Stige, B. (2012). Health musicking: A perspective on music and health as action and performance. In R. MacDonald, G. Kreutz, & L. Mitchell (Eds.), *Music, health, and wellbeing* (pp. 183-195). Oxford University Press.
- Straus, J. N. (2014). Music therapy and autism: A view from disability studies. *Voices: A World Forum for Music Therapy*, 14(3), <https://doi.org/10.15845/voices.v14i3.785>.

- Summers, S. G. (1999). A tapestry of voices: Community building with a geriatric choir reflected in a music therapy model of practice. *Proquest Dissertations*, (Document ID No. 729213201).
- Tamplin, J. (2011). Singing for respiratory muscle training: Using therapeutic singing and vocal interventions to improve respiratory function and voice projection for people with a spinal cord injury. In F. Baker & S. Uhlig (Eds.), *Voicework in music therapy: Research and practice* (pp. 147-162). Jessica Kingsley.
- Tamplin, J., Baker, F. A., Jones, B., Way, A., & Lee, S. (2013). 'Stroke a Chord': The effect of singing in a community choir on mood and social engagement for people living with aphasia following a stroke. *Neurorehabilitation*, 32(4), 929-941, <https://doi.org/10.3233/NRE-130916>.
- The Quality of Life Model (n.d.). Retrieved June 19, 2016 from [http://sites.utoronto.ca/qol/qol\\_model.htm](http://sites.utoronto.ca/qol/qol_model.htm).
- Turry, A., & Marcus, D. (2003). Using the Nordoff-Robbins approach to music therapy with adults diagnosed with autism. In D. J. Wiener & K. Linda (Eds.), *Action therapy with families and groups: Using creative arts improvisation in clinical practice* (pp. 197-228). American Psychological Associatio. <http://dx.doi.org/10.1037/10610-009>.
- Vaillancourt, G. (2012). Music therapy: A community approach to social justice. *The Arts in Psychotherapy*, 39, 173-178, <https://doi.org/10.1016/j.aip.2011.12.011>.
- Vaillancourt, G., Da Costa, D., Han, E., & Lipski, G. (2018). An intergenerational singing group: A community music therapy qualitative research project and graduate student mentoring initiative. *Voices: A World Forum for Music Therapy*, 18(1), 1-17, <https://doi.org/10.15845/voices.v18i1.883>.
- Wager, K. M. (2000). The effects of music therapy upon an adult male with autism and mental retardation: A four-year case study. *Music Therapy Perspectives*, 18(2), 131-140, <https://doi.org/10.1093/mtp/18.2.131>.
- Walker, N. (2018). *The neurodiversity paradigm*. <https://autisticuk.org/neurodiversity/>.
- Warnock, T. (2011). Voice and the self in improvised music therapy. *British Journal of Music Therapy*, 25(2), 32-47, <https://doi.org/10.1177/135945751102500204>.
- Young, L. (2009). The potential health benefits of community based singing groups for adults with cancer. *Canadian Journal of Music Therapy*, 15(1), 11-27.
- Young, L., & Nicol, J. J. (2011). Perspectives on singing and performance in music therapy. In A. Williamon, D. Edwards, & L. Bartel (Eds.), *Proceedings of the International Symposium on Performance Science* (pp. 129-134). Association Européenne des Conservatoires.
- Young, L., & Pringle, A. (2018). Examining lived Experiences of singing in a community hospice bereavement support music therapy group. *Bereavement Care*, 37(2), 55-66, <https://doi.org/10.1080/02682621.2018.1493646>.