

Module 3

Student Name: Jo Warren

Student Number: 2317235

Project Title: Impact of singing/vocalising on mental wellbeing and quality of life in a person diagnosed with both Parkinson's Disease and Motor Neurone Disease – an exploration

Word Count: 6,590

(Project Proposal = 656 / Project Report = 5,934)

Table of Contents

PROJECT PROPOSAL.....	2
Context & Justification	2
Intended Impact.....	2
Outlined Intention.....	2
Project Timeline	3
Ethics and Insider Research.....	3
Individual Learning Outcomes.....	4
PROJECT REPORT	5
INTRODUCTION	5
LITERATURE REVIEW	6
Mental wellbeing and Quality of Life	6
Neurotransmitters and Hormones	9
Dopamine	9
Endorphins and Oxytocin.....	9
Speech – Dysarthria and Interventions	10
Music Therapy Voice Protocol (MTVP).....	10
Vocal Intonation Therapy (VIT)	10
Semi-Occluded Vocal Tract Exercise (SOVTE).....	11
Diaphragmatic Breathing (DB)	12
METHODOLOGY AND METHODS	13
Philosophy and Methodology	13
Methods	14
Questions.....	14
Audio recordings.....	14
Observation	14
Sessions.....	14
Ethics and Insider Research.....	15
FINDINGS.....	16
Theme 1: Meaningful Connection.....	16
Sub-Theme: Disconnection	18
Theme 2: Accessibility	19
Theme 3: Music.....	20
Limitations.....	21
CONCLUSION	21
REFERENCES.....	23

PROJECT PROPOSAL

Context & Justification

Parkinson's Disease (PD) is the second-most common neurodegenerative condition in the UK (Yarnall, et al., 2012). The brain gradually becomes damaged over time, resulting in physical and psychological symptoms including involuntary body tremors, speech issues, depression and anxiety (Poewe, et al., 2017; NHS, 2022a). Motor Neurone Disease (MND) is a less common neurodegenerative condition affecting nerves in the brain and spinal cord, and life-shortening due to rapid progression of disease. Symptoms include breathing issues, muscle weakness, speech and communication problems, and can have a profound impact on quality of life (MNDA, 2023a; MNDA, 2023b).

There is growing research on the benefits of group singing for adults on mental health and wellbeing (Daykin, et al., 2018; Williams, et al., 2018), including PD (Abell, et al., 2017; Irons, et al., 2021). A systematic review of PD studies conducted by Machado Sotomayor, et al., (2021) concluded that improvements could be achieved in emotional wellbeing and communication by singing. The focus for MND has been on preserving quality of life through alleviating physical symptoms, and less so on psychological wellbeing (Harris, et al., 2018); I seek to fill this gap in the literature.

I have not previously worked with anyone diagnosed with PD or MND and keen to expand on singing/vocalising research for mental wellbeing.

My research questions are 'what is the impact of singing/vocalising, in one-to-one sessions, on mental wellbeing and quality of life in a person diagnosed with Parkinson's Disease and Motor Neurone Disease? And are there any benefits to speech and vocal communication?'.

Intended Impact

My aims are to firstly develop an understanding of whether, and if so, how, singing/vocalisations impact mental wellbeing and quality of life; and secondly identify any resulting benefits to speech and communication. Overall aim is for the participant to enjoy and benefit from the sessions.

Outlined Intention

I will undertake a literature review to gain understanding of current research and consult with music therapists for advice on use of voice with PD and MND.

I intend to conduct a qualitative case study with one participant, in person, at their home address, unless an alternative location can be facilitated. I plan for sessions to be weekly, over a four-to-six-week period. An information sheet outlining the research process will be provided, and consent form for signature by the participant.

I will utilise questionnaires suitable for measuring mental wellbeing and quality of life, and observe the participant, with their knowledge. I intend to record the participant saying select words or phrases at the beginning and end of each session, to observe any change in speech. I will conduct an interview after the final session, to gain further understanding of the participant's experience. Analysis will be thematic, a common approach to qualitative data analysis (Bryman, 2016a), and reflexive for flexibility (Braun & Clarke, 2006).

Project Timeline

Activity	Oct-24	Nov-24	Dec-24	Jan-25
Literature review				
Prepare information sheet/consent form				
Complete risk assessment				
Sessions with participant – data collection				
Aggregate data/notes for analysis				
Write draft report				
Submit draft report				Due 13th
Prepare presentation slides				
Finalise report/presentation slides for formal submission				Due 31st

Ethics and Insider Research

Key ethical considerations are the welfare and safety of the participant, not causing harm, facilitating autonomy in their decision making and to be fair and respectful (Lulé, et al., 2019). I will conduct a risk assessment, to identify and mitigate any risks to the participant and myself.

The participant I plan to work with is known to me, and as such, being an insider-researcher, I am mindful of my emotional reaction in conducting this research, and potential bias that could negatively impact research outcomes. For example, the participant might respond to questions in a way they believe I would like them to answer, to fit a particular narrative.

Individual Learning Outcomes

- Gain further knowledge on research process, through practical application.
- Understand more about PD and MND.
- Adapt and expand my practice to hopefully access work with this client group.

PROJECT REPORT

INTRODUCTION

As a community musician, I facilitate access to music and singing through sessions that aim to improve mental wellbeing and quality of life (QoL), particularly for people who are facing additional challenges through ill health or otherwise. Keen to expand on singing/vocalising research in this area, with an interest in working with someone diagnosed with a neurodegenerative condition that I had not previously worked with, I identified Parkinson's Disease (PD) and Motor Neurone Disease (MND).

PD is the second-most common neurodegenerative condition in the UK (Yarnall, et al., 2012), where the brain gradually becomes damaged over time, resulting in physical and psychological symptoms including involuntary body tremors, speech issues, depression and anxiety (Poewe, et al., 2017; NHS, 2022a). MND is less common, affecting nerves in the brain and spinal cord, and life-shortening due to rapid progression of disease. Symptoms include breathing issues, muscle weakness, speech and communication problems, and it can have a profound impact on quality of life (MNDA, 2023a; MNDA, 2023b). Co-occurrence of PD and MND is rare, and underlying mechanisms of association unclear (Chanson, et al., 2010).

There is growing research on the benefits of group singing for adults on mental health and wellbeing (Pearce, et al., 2016; Daykin, et al., 2018; Williams, et al., 2018), including PD (Abell, et al., 2017; Irons, et al., 2021). A systematic review of PD studies conducted by Machado Sotomayor, et al., (2021) concluded improvements could be achieved in emotional wellbeing and communication by singing in groups or individually. However, a scoping review by Harris, et al., (2018) found the focus for MND has been on preserving QoL through alleviating physical symptoms, and less so on psychological wellbeing, hence I sought to fill this gap in the literature.

My research questions were 'what is the impact of singing/vocalising, in one-to-one sessions, on mental wellbeing and quality of life in a person diagnosed with Parkinson's Disease and Motor Neurone Disease? And are there any benefits to speech and vocal communication?'.

My research aims were to firstly develop an understanding of whether, and if so, how, singing/vocalisations impact mental wellbeing and quality of life, and secondly identify any resulting benefits to speech and communication. My aim overall was for the participant to enjoy and gain benefit from the sessions.

Expected learning outcomes were that I gain further knowledge on research process through practical application, understand more about PD and MND through a literature review, and adapt my practice with a long-term goal of enabling access to work with this client group.

LITERATURE REVIEW

I utilised an inductive methodological approach to enable broader exploration of topics relevant to my research. Initial searches were mental wellbeing and QoL, before considering links to PD and MND and the impact of singing/vocalising thereon. Subsequent searches, whilst motivated by the literature, also considered my primary and secondary aims.

Mental wellbeing and Quality of Life

The World Health Organization (WHO) defines mental wellbeing as a state of mental health that “enables people to cope with the stresses of life, realise their abilities, learn well and work well, and contribute to their community” (World Health Organization, 2022, [no pagination]). According to Mind (2023), a mental health charity in England, mental wellbeing does not have one set meaning, rather it is a spectrum that varies from person to person in their perception of how they are coping with daily life.

Mental wellbeing is a contributing factor in perceived QoL, defined by the World Health Organization (ND) as what an individual considers to be their position in life within the context of their culture, personal values, hopes and concerns. A systematic review conducted by Munster, et al (2024) identified seven main themes that determined subjective QoL for people with PD (see Figure 1), deeming it essential that healthcare professionals acknowledge emotional, psychological and social consequences during assessment, not just physical dimensions, which impact mental wellbeing. QoL has been found to be diminished in people living with PD (Zhao, et al., 2021; Munster, et al., 2024), and a study conducted by Young et al., (2019) identified anxiety and limitations in activity as the main contributors to poorer QoL for those living with MND. Due to the ever-changing and multifaceted nature of MND and its impact on QoL, an outcome of a study by Edge, et al. (2020) suggested that regular and methodical assessments of pain, depression and anxiety would be beneficial in all-round care.

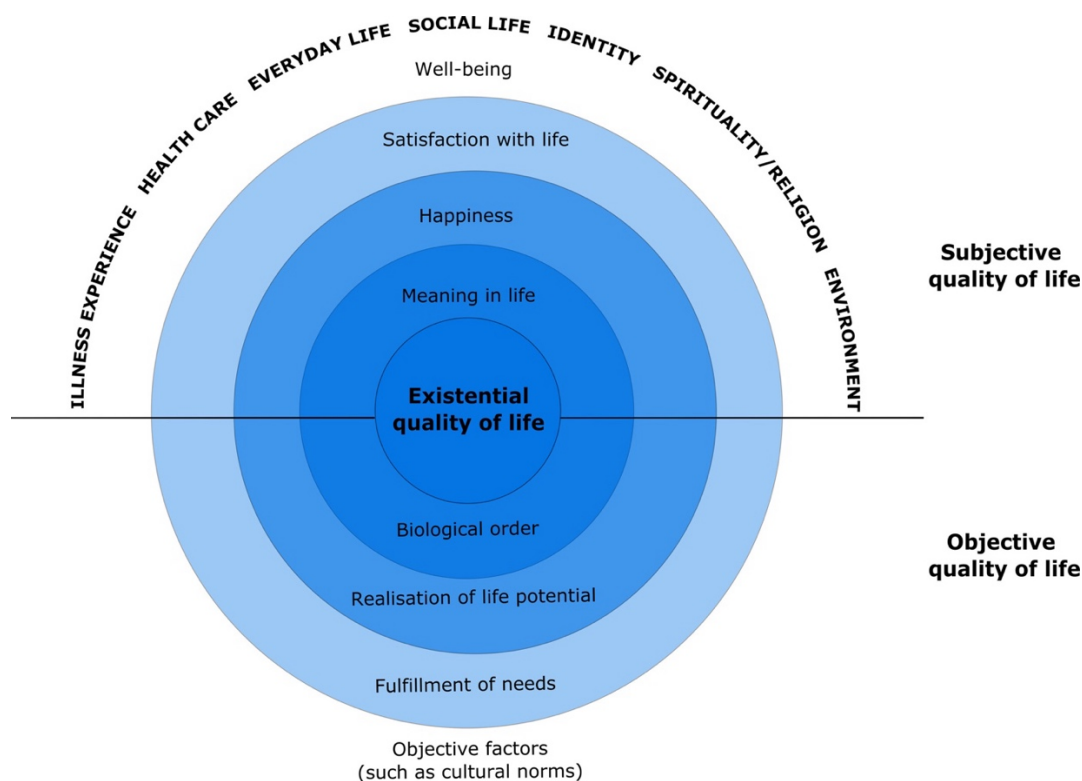


Figure 1: Adapted overview of integrative theory of QoL based on study results (Munster, et al., 2024)

It has been suggested that singing is effective as a supplementary therapy for people with PD (Irons, et al., 2019), because it can target symptoms not currently responding to medications, such as anxiety and depression (Stegemöller, et al., 2017), both of which strongly influence mental well-being (Malone & Wachholtz, 2018). Brancatisano, et al., (2020) suggest that music provides significant value to health and wellbeing, proposing the Therapeutic Music Capacities Model (TMCM) (see Figure 2) as a potential framework for developing non-medicinal treatments for neurological disorders, such as PD.

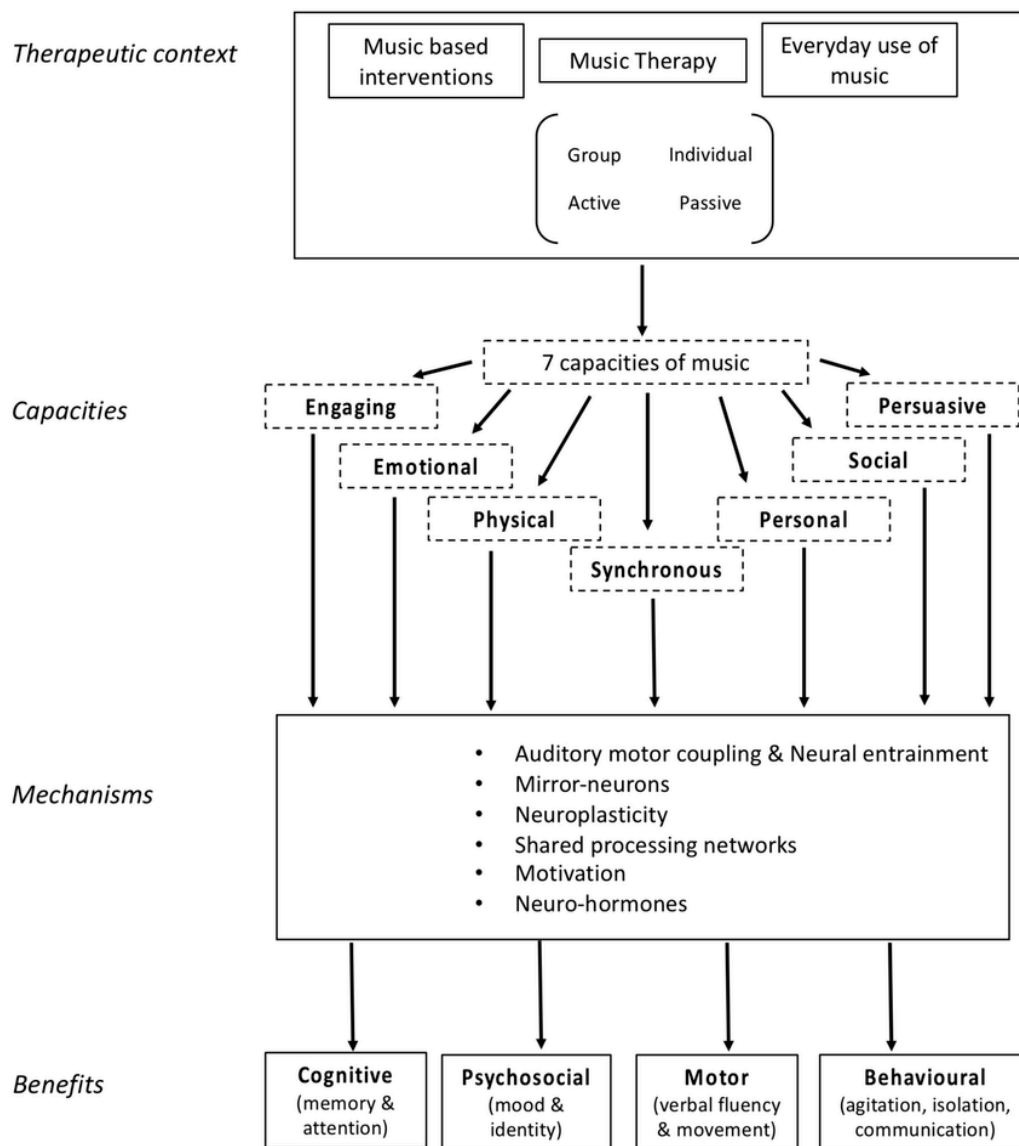


Figure 2: Therapeutic Music Capacities Model (TMCM) (Brancatisano, et al., 2020).

A further study, to explore impact on QoL based on perception of voice and swallowing disturbance, found an associated decline as PD progresses (Van Hooren, et al., 2016). Hence use of a singing intervention could be beneficial, as demonstrated in a study by Stegemöller, et al. (2017), which found group singing improved breath control, QoL, swallowing and voice control and strength. Enhanced wellbeing and improved voice-related QoL were findings in a twelve-month controlled clinical trial of therapeutic group singing in PD (Tamplin, et al., 2020). Improvements in breath control, speech and swallowing were also observed in music therapy treatment, which included singing, for participants with early and mid-stage MND (Apreleva Kolomeytseva, et al., 2023).

A contributory factor as to why singing has this impact on mental wellbeing and QoL could be linked to neurotransmitters and hormones, such as dopamine, endorphins and oxytocin, chemical substances that transport messages around the body.

Neurotransmitters and Hormones

Neurotransmitters travel between neurons, also known as nerve cells, the most important and influential cells in the nervous system, processing sensory information and controlling behaviour (Hyman, 2005). Hormones, produced by endocrine glands in the endocrine system, are released and travel via the bloodstream (Hiller-Sturmhöfel & Bartke, 1998) to stimulate function of specific cells, tissues and organs (Hine, 2019a).

Dopamine

Singing can induce feelings of motivation, pleasure and reward, through neurochemical changes in dopamine (Chanda & Levitin, 2013), a neurotransmitter and hormone (Lackie, 2019a). There is a direct relationship between PD and concentrations of dopamine in the brain (Latif, et al., 2021), with loss of dopamine-producing neurons leading to development of PD (Parkinson's UK, 2022). Reduced dopaminergic function was also found in Amyotrophic Lateral Sclerosis (ALS) (Takahashi, et al., 1993), the most common form of MND (MND, 2023a). Hence, dopamine would need to be present in the body for singing to affect a change.

Endorphins and Oxytocin

Upregulation of **endorphins**, triggered by singing, can help improve mood and QoL (Chanda & Levitin, 2013; Kang, et al., 2018), and increase pain thresholds (Weinstein, et al., 2016), due to endorphins being a natural opioid in the body that can produce feelings of happiness and relieve pain (Hine, 2019b). Group singing has been found to reduce stress and encourage social bonding through stimulating **oxytocin** (Keeler, et al., 2015; Weinstein, et al., 2016; Schladt, et al., 2017; Kang, et al., 2018; Good & Russo, 2021), a hormone and neurotransmitter (Neumann & Landgraf, 2012). Therefore, singing could be a beneficial activity for people with PD or MND, particularly with others, contributing to improved mental wellbeing and QoL.

Appendix A includes additional learning and thoughts subsequently considered out of scope.

Speech – Dysarthria and Interventions

Speech difficulties are common in PD and MND, particularly **dysarthria**, “a group of neurologic speech disorders that reflect abnormalities in the strength, speed, range, steadiness, tone, or accuracy of movements required for the breathing, phonatory, resonatory, articulatory, or prosodic aspects of speech production” (Duffy, 2013, p. 4). In other words, a motor speech disorder that prevents full control of muscles utilised in speech, such as facial muscles, lips, throat and tongue, resulting in changes to voice quality and sound, usually slurred, unclear and monotone (NHS – East Sussex Healthcare, ND; MNDA, 2023c). There are different types of dysarthria, with hypokinetic commonly found in PD, and spastic and flaccid in MND, caused by damage to upper and lower motor neurones respectively (SLT, ND).

Music Therapy Voice Protocol (MTVP), an approach originally developed by Haneishi (2001) for individuals with PD, consists of various vocal and singing exercises and has been utilised and adapted in subsequent studies for PD. Research by Yinger and Lapointe (2012), with ten participants that already participated in a Parkinson’s choir, found significant improvements in volume of conversational speech following a group singing intervention; a feasibility study by Azekawa & Lagasse (2018), with five participants with prior experience of group singing, measured slight improvements in articulation and vocal quality of speech following group music therapy sessions; and an exploratory study by Higgins & Richardson (2019), with ten participants without prior singing experience, found significant improvement in speech clarity and vowel articulation following a choral singing intervention. The benefits identified across these studies vary, possibly due to adapting protocol to suit their approach, and indicate that prior singing experience is not prerequisite nor an advantage.

Vocal Intonation Therapy (VIT) is defined as “use of vocal exercises to train, maintain, develop and rehabilitate aspects of voice control due to structural, neurological, physiological, psychological, or functional abnormalities of the voice apparatus” (Thaut, 2014, p. 179), such as breath control, dynamic inflection, intonation, pitch and voice quality. Preliminary findings of a pilot study with participants that acquired dysarthria through a traumatic event such as brain injury or stroke, utilised multiple interventions, including VIT, hence it was not clear which elements were effective. However, results suggested that standardised speech production might be facilitated through a program of vocal exercises and singing (Tamplin, 2008). A randomized controlled trial with spinal cord injury patients found that VIT-based music therapy combined with **oral motor respiratory exercises (OMREX)**, a “technique for addressing the improvement of articulatory control, respiratory strength, and function of the speech apparatus” (Mertel, 2014, p. 161), was beneficial for

improvements in both respiratory dysfunction and voice sound quality (Zhang, et al., 2021). Due to focussing on elements of voice impacted by dysarthria, both VIT and OMREX could potentially be suitable interventions to benefit speech in PD and MND.

Semi-Occluded Vocal Tract Exercise (SOVTE) involves partially closing the vocal tract whilst vocalising, creating back pressure, resulting in vibration of vocal folds with higher efficiency and less effort (see Figure 3) (Nerenberg, 2024), and can help improve awareness of breath and diaphragmatic movement in the abdominal area (NHS, 2023). SOVTEs are often used by singers, in vocal warm ups and a tool to improve voice, and by speech language therapists (SLTs) as an intervention for laryngeal voice disorders (Dargin & Searl, 2015).

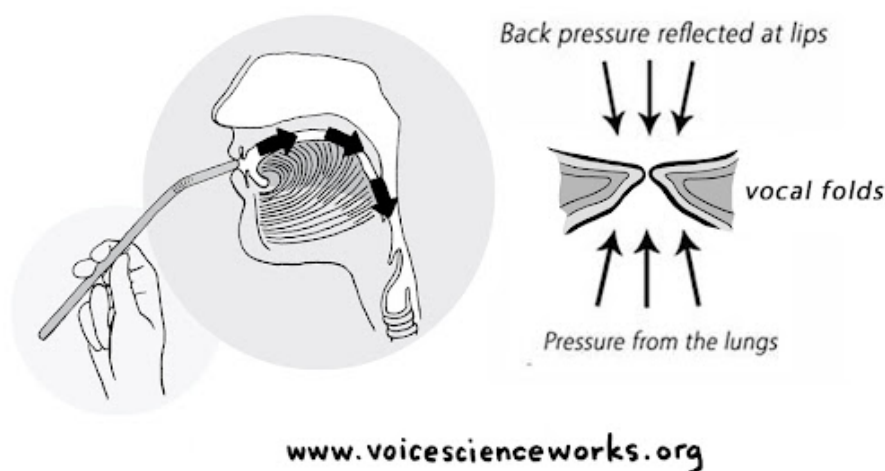


Figure 3: SOVT (Voice Science Works, ND)

Example SOVTEs include straw phonation, producing a sustained vowel whilst holding a straw between the lips; sustained phonation, such as humming; and lip bubbles, raspberries and tongue trills (Nix & Simpson, 2008). A randomised controlled trial, led by a music therapist, combined straw phonation and therapeutic group singing for individuals with PD, and found it to be a promising intervention for improving voice quality and mood (Lee, et al., 2024). Resonance tubes, a type of SOVTE that utilises a secondary source of vibration in the vocal tract, were used in a clinical trial led by SLTs to verify the effect of resonance tube therapy on PD, and found that vocal intensity increased, and vocal quality and voice-related QoL improved (dos Santos, et al., 2022). According to Titze (2018), the efficacy of SOVTEs for both singing and speaking is no longer challenged, but knowledge of underlying physiology may not always be fully understood by practitioners.

Diaphragmatic Breathing (DB), also referred to as abdominal breathing, uses the diaphragm, a muscle located beneath the rib cage, to help increase airflow to the lungs (Royal Brompton & Harefield NHS Foundation Trust, 2017). The technique focusses on taking slow and deep breaths, inhaling through the nose and exhaling out of the mouth (National Cancer Institute, ND), resulting in lowering of the diaphragm and expansion of the abdominal cavity during inhalation, relaxing back in to position during exhalation (Farhi, 1996) (see Figure 4).

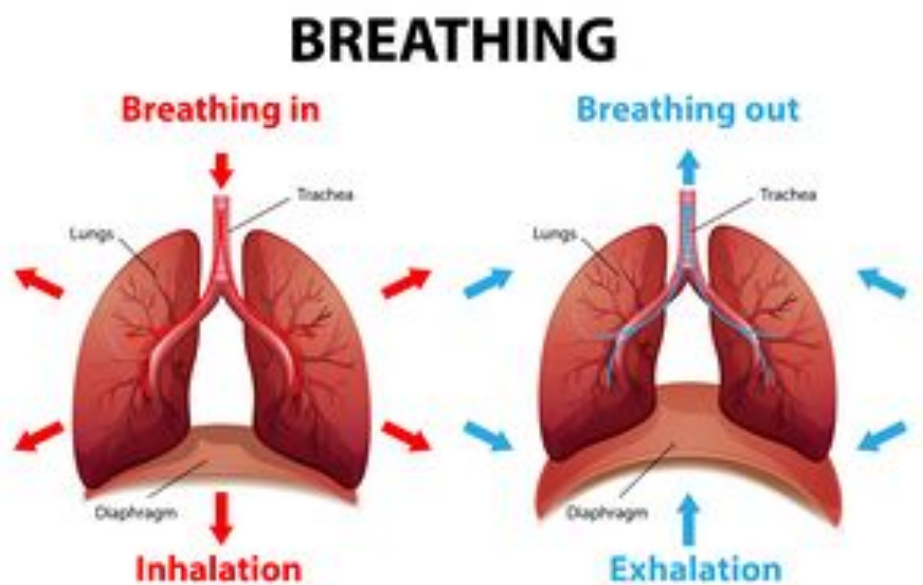


Figure 4: Breathing (Physiopedia, ND)

DB is used in a singing programme called 'Singing for Lung Health' (SLH), which, pending further study on a larger and longer scale, suggests improvement in managing shortness of breath, particularly for people with respiratory diseases, with no harmful events or side effects reported (Lewis, et al., 2016). In addition to supporting breath, DB can enhance projection and reduce straining of voice in PD (Speech Therapy For All, ND). Breathlessness is common in MND (National Institute for Health and Care Excellence, 2019), with DB exercises incorporated in a music therapy case study with ALS (Kolomeytseva, et al., 2023), to improve breathing, and speech when combined with singing interventions. Hence use of DB might be beneficial.

METHODOLOGY AND METHODS

I identified a seventy-year-old man diagnosed with PD nine and a half years ago, and MND one year later. Following initial contact to gauge interest in research participation, an information sheet was provided for review, and consent form for signature (see Appendix B). I felt it was important to use a name, not just 'participant', throughout the report, to help connect the reader with his experience - he chose '*Mark*' (not his real name).

Philosophy and Methodology

My ontological position was subjectivist, to embrace his perspective using an interpretivist epistemological approach to observe, gain understanding and find meaning, placing axiological value on *Mark* and his interpretation of his changing reality. The interpretivist paradigm, also referred to as constructivist, was best suited to support my research, a collaboration with the participant using a qualitative methodology. An inductive approach was utilised to gain an experiential perspective and develop theories from emerging data.

I originally planned to utilise thematic analysis (TA), a common approach to data analysis (Bryman, 2016a), because of its reflexivity for flexibility (Braun & Clarke, 2006). However, Braun & Clark (2020) recommended that TA not be used if research is focussed on gaining understanding of an individual's experience, analysing unique features of individual cases and involves a small sample. I considered interpretative phenomenological analysis (IPA) better suited, due to these elements being fundamental in my research. Unlike TA, which is not connected to specific theoretical frameworks, IPA is rooted in the philosophies of hermeneutics, phenomenology and idiography. **Hermeneutics** is concerned with interpreting human behaviour, to gain meaning and understanding; **phenomenology** is concerned with the nature and perception of human experience, also considering preconceptions (Bryman, 2016b); and **idiographic**, intensive study of a single case to obtain an in-depth understanding (American Psychological Association, 2018). Using a participant-oriented approach and self-reflection throughout to enable deeper interpretation of data, was important for my research, and key elements of IPA (Alase, 2017).

I undertook a single-subject case study, to enable collection of in-depth data using multiple methods (Creswell, 2013), to help gain deeper understanding of *Mark's* experience. Sessions were one-to-one, in-person, for approximately one hour and fifteen minutes, over six-weeks. A short interview was conducted before the first session to obtain initial information and provide a baseline for *Mark's* interpretation of mental well-being, QoL and

how he felt about his speech at that time. A final interview, and debrief, was conducted after the last session to capture any additional information.

Methods

Questions were asked at the beginning and end of each session, to aid identification of any change between those two points, in how *Mark* felt, both emotionally and physically, and what, if anything, he had observed in his speech. Questions were mostly open-ended, to avoid closed answers, such as 'yes' or 'no', except when providing an opportunity for *Mark* to comment further. Some questions remained throughout, whilst others were added based on answers given or observations made (see Appendix C).

Audio recordings were used to measure any audible change in speech, through interpretation of if words sounded different post session compared to pre, such as perceiving clearer pronunciation of consonants. Words or phrases selected either appeared in the songs to be sung during the session or were the song titles themselves.

Observation was used throughout, an inductive approach, to enable reaction to both *Mark's* physical and verbal cues; to note any thoughts or poignant moments; to adjust session content, such as adaptations to warm-ups or song selection; and aid self-reflection.

Sessions

Session structure was comprised of seven stages: (1) pre-session questions; (2) audio recording; (3) vocal warm-up and stretches; (4) singing a selection of songs; (5) listening/breath work; (6) audio recording; and (7) post-session questions (see Appendix D).

Warm-ups began with DB, which also helped with breath control in a later exercise that engaged the abdominal cavity to support short and longer bursts of air whilst pretending a finger was a lit candle. Other warm-ups for breath control and voice, such as breathing in through the nose and out of the mouth on 'ssss', and what is referred to as the 'rollercoaster', a glissando or slide from a low to high pitched note and back over different sounds, were used in a 'Sing To Beat Parkinson's' program utilising VIT (Chiltern Music Therapy, 2019), hence supporting use of these exercises for PD. Yawns, to open the throat, and facial massage, both elements of MTVP, and lip bubbles, a SOVTE, were also included.

An existing consideration in my practice is identifying suitable content. Songs selected were accessible, meaning not overly complex and difficult to sing, engaging, fun and uplifting, and

included songs requested by *Mark*. This was followed by, in sessions one to five inclusive, a piece of instrumental music, with a focus on breathing and releasing tension in the body, and in session six, a chance to relax, and listen to a fun, comedic Christmas-themed song.

Ethics and Insider Research

Prior to conducting research, a permission letter was produced, ethical approval obtained from University of Wales Trinity St. David, and confirmation of enhanced DBS provided (see Appendix E).

Key **ethical considerations** were the welfare and safety of *Mark*, by not causing harm, facilitating autonomy in their decision making and being fair and respectful (Lulé, et al., 2019). Prior to starting sessions, I conducted a risk assessment (see Appendix F). At the beginning of each session, I would remind *Mark* that if he felt uncomfortable or needed to stop at any time, to let me know immediately. I observed throughout, reacting where needed – for example, I noticed fatigue during session five, hence we stopped to focus on breathing and relaxation, only continuing because *Mark* wanted to, and was ready to do so.

Warm-up exercises, which I utilise in my practice, were included, however, during my literature review, I noted some were used in specific interventions, particularly music therapy (MT) and speech and language therapy (SLT). MT is a clinical, psychological and evidence-based intervention, delivered by music therapists, involving use of music through a therapeutic relationship to help improve QoL and mental well-being for individuals with non-musical goals, such as communication, emotional and physical needs (British Association for Music Therapy, ND; American Music Therapy Association, ND). SLT supports and treats people experiencing difficulties with communication or drinking, eating and swallowing (Royal College of Speech and Language Therapists, ND). Both MT and SLT are allied health professions (AHPs) (NHS England, ND) and, to practice in the UK, require qualified therapists to be registered with the Health and Care Professions Council (HCPC) (British Association for Music Therapy, ND; Health & Care Professions Council, 2023). In addition to ethical considerations around *Mark* as an individual and impact of my work with him, I was mindful that, whilst underlying elements of my practice are supported by MT and SLT interventions, it is not what my practice nor sessions conducted as part of my research, are. However, it is incredibly helpful to know this information, which further informs my practice.

Mark is known to me, and as such, being an **insider-researcher**, I was mindful of my emotional reaction in conducting this research, particularly as we had not seen each other

for approximately five years. I considered potential biases that could negatively impact research outcomes, for example, *Mark* responding to questions how he thought I would like them to be answered, to fit a particular narrative, which, due to being aware of my research aims, was highly likely. I was also aware of my own bias that might affect how I formed or asked questions, which could be leading and negatively impact research credibility.

FINDINGS

All questions, answers and notes were typed up in Word, printed out, read, re-read and hand-written notes made (see Appendix G). Data was entered in an Excel spreadsheet, to identify and group themes generated (see Appendix H), which were (1) meaningful connection, with a sub-theme of disconnection; (2) accessibility; and (3) music.

Theme 1: Meaningful Connection

The first theme highlights meaningful connection and its importance in relationships with family and friends, combined with light entertainment and humour, helping to maintain an improved sense of mental wellbeing and QoL, particularly when navigating a degenerative condition.

Prior to commencing our first session, *Mark* described his wellbeing and QoL as “not very good at the minute”, indicating understanding of its dynamic nature. I did not question this response further at the time, mindful of not wanting to cause distress, however, perhaps I could have sent some initial questions by email ahead of our first session. After our last session, *Mark* described his wellbeing and QoL as “better than it was, because of approaching Christmas and having fun”. This change could, in part, be due to more social activities lined up with family and friends leading up to the festive period. For example, after our first session, I asked if there was anything he was particularly looking forward to over the next week – “not that I can think of”. Whereas, all subsequent sessions he mentioned being visited by, or going out with, family or friends. A poignant moment was during the second session when *Mark* showed me his son’s ‘Christmas Book’, designed and produced for teaching guitar to children, that had just been published and included a dedication to him.

Our sessions could be considered a social activity, with connection between us as participant and researcher at its heart. Trust and collaboration are important aspects of qualitative research, to facilitate disclosure of rich data (Given, 2008). There were moments of humour throughout, including during vocal warm-ups being competitive on the out breath of ‘ssss’, and when asked if he had sung since our last session, was told “no, should I?”. I

felt our connection strengthened as sessions continued, particularly after 'What A Wonderful World' during session three, a beautiful song which we both enjoyed singing together and I would describe as feeling meaningful. I believe that *Mark* also felt connected through our sessions, based on responses such as "I enjoyed it. Always nice to see you", and when commenting on sessions overall, stated "I've enjoyed them all" and "thoroughly enjoyed the time/session". His wife, who did not attend sessions, commented on how much *Mark* had enjoyed them, independently supporting the power of connection through an activity utilising music and singing. Social connection has been reported in group singing for PD (Abell, et al., 2017), suggesting it is participation in a joint activity with others that facilitates bonding and cohesion (Cross, et al., 2015; Brancatisano, et al., 2020; Keeler, et al., 2015).

To understand how use of music and voice in our sessions might contribute to mental wellbeing and QoL, there were check-ins immediately pre and post session, to avoid other activities potentially impacting *Mark's* measure, or interpretation. The first session began with *Mark* describing that he felt a "bit tired. Physically, generally feel okay. Emotionally, feel a bit down", and afterwards, "feel happier. Still a bit tired. Physically okay". I recall thinking about potential bias in these responses, reiterating the sole purpose was to obtain an honest account of his experience and gain understanding of his perspective. *Mark* subsequently introduced a mark out of ten for sessions two to six (see Figure 5), reflecting how he felt in that moment. A lower mark indicates lower mood for emotional measure, and greater aches, pains or stiffness in the body for physical measure, and vice versa.

Session #	Self-measure (x/10) - Emotional			Self-measure (x/10) - Physical	
	Pre Session	Post Session		Pre Session	Post Session
Two	8 or 9	10		8 or 9	10
Three	8	9 or 9.5		8	9 or 9.5
Four	4	7 or 8		6	6
Five	8	10		8	9
Six	7	10		7	9

Figure 5: Self-measure of emotional and physical wellbeing

Mark's elevated self-measures, particularly of emotional wellbeing, appear to support previous research on bonding and connection reported through group singing. Further, a

shared experienced of joyful singing has been described as powerful, particularly during times of difficulty (Batt-Rawden & Andersen, 2020).

Singing also triggered, and enabled *Mark* to connect with, emotions and memories. For example, 'Show Me the Way to Go Home' in the first session reminded him of a coach trip when everyone sang this song together, and 'Scarborough Fair' in the fourth session, reminded him of being in a band in his teens, and playing guitar at church. Additionally, during session four we sang a song *Mark* requested, 'Father to Son', and at the end he became a little overwhelmed with emotion, which was a surprise as he listens to it regularly. Thus, singing familiar songs acted as a retrieval cue for music-evoked autobiographical memories (MEAMs), resulting in varying emotional responses and nostalgia (Janata, et al., 2007; Ford, et al., 2011; Kaiser & Berntsen, 2023), suggesting that choice of song, and not just the act of singing itself, contributes to mental wellbeing and QoL.

Sub-Theme: Disconnection

A sub-theme was disconnection, particularly in relation to voice.

Prior to commencement of the first session, I asked how *Mark* felt about his speech/vocal communication, and he responded, "it's poor, frustrating" followed by "my voice is better than iPad though", remarking it was "difficult to be part of a conversation, as already moved on". The difficulties *Mark* experiences with his speech are clearly having an impact, potentially resulting in isolation through disconnecting from wider social activities, due to feeling self-conscious about vocal communication. Communication difficulties have been found to be significant in predicting limited social interactions and greater likelihood of loneliness in older adults (Palmer, et al., 2016), which when combined with side-effects of PD and particularly MND (Miller, et al., 2006; Schlüter, et al., 2018; Perepezko, et al., 2019), result in social withdrawal. Hence, support in maintaining meaningful social engagement is important, to facilitate connection that contributes to mental wellbeing and QoL.

Analysis of audio recordings found that speech pronunciation was slightly clearer post session in sessions one to three, and in some cases, words accessed more easily and faster. Our interpretations were aligned as *Mark* said "I think I said those five words clearer" in session one, "felt it was slightly clearer on test at the end" in session two and "I noticed I said the test words easier at the end" in session three. A notable improvement in session three was 'Sky' - *Mark* had difficulty pronouncing the 'k' during the pre-session test but not

post. Improved clarity of speech was found in a study of group singing for people with PD (Abell, et al., 2017), potentially supporting these results.

Less difference was noticed in session four, which could have been impacted by the intense emotions experienced. Session five was slightly clearer, the most notable improvement being the time needed to say 'Jingle Bells' in the post-session test compared to pre. Our interpretations were mostly aligned, as *Mark* stated "slightly better, but not as improved as in previous sessions" in session four and "not much but did find it easier to say 'Jingle Bells' - been struggling with speech a bit more than normal recently" in session five. In session six, *Mark* stumbled over slightly different words during the post-session test, however, speech was still intelligible. *Mark* did not notice a difference, stating "not really, no – feel a bit more tired". Fatigue is common, progressive and often disabling in MND, through a combination of tiredness throughout the body and muscle weakness in the limbs and bulbar region, including the face, mouth and throat (Gibbons, et al., 2013), causing deterioration in speech (Royal College of Speech and Language Therapists, 2024). A study on speech-related fatigue in PD found that articulation of speech appeared resistant to fatigue (Makashay, et al., 2015), however this followed an hour of functional speech exercises.

It is difficult to ascertain how much *Mark's* diagnoses impacted the level of tiredness experienced, particularly during a busier time of year, but what is clear is that these sessions helped maintain connection – both in voice and socially. When asked if he found it easier to sing or speak, from a retrieval and pronunciation of words perspective, *Mark* stated "singing, I think". A study by Harris, et al. (2016) suggests that the effects of acquired dysarthria through PD are audibly minimised whilst singing, hence, regular music and singing sessions could help counteract the disconnection experienced through speech alone.

Theme 2: Accessibility

Another theme generated, which underlies everything I do in my work, is accessibility.

To conduct my research, and for *Mark* to be able to access the sessions, I attended his home. When asked during session four if his preference would be one-to-one sessions, or a local group, *Mark* said "no, I'd prefer one-to-one". We discussed this again at our last session, based on if I was able to set up a group and run it myself – still a preference for one-to-one, however, potential interest in attending a group if he could get there. A pilot project exploring access to activities for people living with MND identified barriers to participation, including transport and lack of support (Simpson, et al., 2020).

Access to songs, particularly those *Mark* requested, was also important. For example, if the tempo of a song was too fast, we could listen to the recording, then play it slower on the keyboard to enable *Mark* and I to sing together at a pace that was comfortable for him, such as 'You Can't Hurry Love' or 'A Sky Full of Stars'. Another example could be pitch of a song, where I could transpose to a different key, to help the notes be accessible and more comfortable to sing.

We also discussed alternative ways to access the guitar, an instrument that *Mark* enjoys playing but finds increasingly frustrating due to limitations in hand movement, through experimentation with pedals to utilise effects that could generate a pleasing sound with minimal strumming.

Theme 3: Music

It was clear that music is meaningful to *Mark*. During the fourth session, when asked how important music was to him, he answered "quite important", and described that his connection with, and taste in music, had changed since his diagnoses - "find it more therapeutic now. Listen to music a lot more now than used to. Also listen to music when can't sleep". An exploration of studies evaluating music therapy applications across a range of neurological disorders, including PD and music listening, found optimal impact on emotional and mental state, sleep function and QoL (Ramaswamy, et al., 2024). In this context, I interpret *Mark's* use of 'therapeutic' to be informal and mean comforting, relaxing and soothing, rather than formally associated with therapy facilitated by AHPs.

Playing guitar is something *Mark* still likes to do but is finding it "frustrating as hands aren't what they used to be and I'm finding it difficult to strum now". *Mark* also "used to play and sing, but not singing now – struggle with both at the same time and doesn't sound good". It is very clear the frustration *Mark* experiences when attempting an activity he has always enjoyed, however, there was connection through humour, stating he prefers to sing with someone, rather than on his own "to mask my terrible voice". This indicates a decline in self-confidence, in part, due to reduced singing ability (Abell, et al., 2017), but could also suggest that maintaining social connection through an activity, such as music and singing, could help negate under-confidence, avoid isolation and lift mood.

Limitations

Specific types of PD and MND were not ascertained, and therefore any conclusions drawn could not be linked to a particular diagnosis, compounded by co-occurrence. A single-subject design using IPA meant that, despite the positive outcome of gaining greater understanding of *Mark's* experience, data was not generalisable. However, if additional case studies had been undertaken, data comparison could have helped provide further insight. Awareness of research aims, resulting in answers to questions and interpretation thereon, being influenced by 'confirmation bias' (Wason, 1960) was also a limitation.

CONCLUSION

Elevated self-measures of emotional wellbeing indicate that use of voice in music sessions has a positive impact on mental well-being. Results suggest this is primarily due to a meaningful connection between *Mark* and I, through the shared experience of singing together, a social activity which, in theory, could be underpinned by stimulation of oxytocin, as suggested in the literary review. Improved mood could be linked to upregulation of endorphins, which might also contribute to elevated self-measures of physical wellbeing, through being a natural pain reliever. The only exception was session four, with no change in self-measure of physical well-being, possibly due to the intense emotions experienced during that session. Overall, use of voice contributed to improved self-measures of mental well-being and QoL, supporting the importance of connection through music and singing. However, results cannot be generalised, due to utilising a single case-study approach.

It was clear that connections with, and support from, family and friends, and engaging in meaningful activities such as music, is important to *Mark*. The most accessible musical activity, and least frustrating due to physical limitations, is music listening, which can improve mood. Interest was potentially shown in attending a group music and singing session, if available, in the future, but preference was shown for one-to-one, highlighting the importance of autonomy in decision-making, with support in facilitating that choice.

A potential benefit of singing and vocalisation is improvement in speech. There were small improvements in clarity of speech identified during this study, which may, in part, be due to elements of the warm-up being aligned with interventions such as MTVP, SOVTE and VIT. Another contributory factor might be singing the words that were spoken in pre and post session audio recording tests, although there is no evidence to support this hypothesis. Introducing words in the audio test that were not used within the sessions might have been

beneficial for comparison purposes. Overall, a minimal secondary benefit with no evidence of impact extending beyond immediately post session.

Through exploration of the literature and practical application of research, I have gained a basic level of knowledge and understanding, but further engagement in reading and research would be needed to develop my practice and begin working with this client group, possibly with support from a MT. Recommendations for future research would be for measurement of underlying biological and neurological changes, particularly in MND, to further support qualitative study findings and help promote the use of music and voice as a non-pharmaceutical option that contributes to wellbeing and QoL in person-centred care.

REFERENCES

Abell, R.V., Baird, A.D. and Chalmers, K.A. (2017) 'Group Singing and Health-Related Quality of Life in Parkinson's Disease', *Health psychology*, 36(1), pp. 55–64. Available at: <https://doi.org/10.1037/hea0000412>.

Alase, A. (2017) 'The Interpretative Phenomenological Analysis (IPA): A Guide to a Good Qualitative Research Approach', *International journal of education and literacy studies*, 5(2), pp. 9–19. Available at: <https://doi.org/10.7575/aiac.ijels.v.5n.2p.9>.

American Music Therapy Association (ND) What is Music Therapy? Available at: <https://www.musictherapy.org/about/musictherapy/> (Accessed: 29th November 2024).

American Psychological Association (2018) APA Dictionary of Psychology Available at: <https://dictionary.apa.org/idiographic> (Accessed: 23rd December 2024).

Apreleva Kolomeytseva, A., Fachner, J. and Street, A. (2023) 'Music.ALS: Clinical Perspectives on a Home-Based Music Therapy Treatment to Improve Breathing, Speech, Swallowing and Cough of Persons with ALS (MND)', *Medical Research Archives*, 11(12), pp. 1-12. Available at: <https://doi.org/10.18103/mra.v11i12.4795>.

Azekawa, M. and Lagasse, A.B. (2018) 'Singing Exercises for Speech and Vocal Abilities in Individuals with Hypokinetic Dysarthria: A Feasibility Study', *Music therapy perspectives*, 36(1), pp. 40–49. Available at: <https://doi.org/10.1093/mtp/miw042>.

Barber, S.C., Mead, R.J. and Shaw, P.J. (2006) 'Oxidative stress in ALS: A mechanism of neurodegeneration and a therapeutic target', *Biochimica et biophysica acta. Molecular basis of disease*, 1762(11), pp. 1051–1067. Available at: <https://doi.org/10.1016/j.bbadis.2006.03.008>.

Batt-Rawden, K. and Andersen, S. (2020) "Singing has empowered, enchanted and enthralled me'-choirs for wellbeing?", *Health promotion international*, 35(1), pp. 140–150. Available at: <https://doi.org/10.1093/heapro/day122>.

Bonvin, C., Horvath, J., Christe, B., Landis, T. and Burkhard, P.R. (2007) 'Compulsive singing: another aspect of punding in Parkinson's disease', *Annals of neurology*, 62(5), pp. 525–528. Available at: <https://doi.org/10.1002/ana.21202>.

Brancatisano, O., Baird, A. and Thompson, W.F. (2020) 'Why is music therapeutic for neurological disorders? The Therapeutic Music Capacities Model', *Neuroscience and biobehavioral reviews*, 112, pp. 600–615. Available at: <https://doi.org/10.1016/j.neubiorev.2020.02.008>.

Braun, V. and Clarke, V. (2006) 'Using thematic analysis in psychology', *Qualitative research in psychology*, 3(2), pp. 77–101. Available at: <https://doi.org/10.1191/1478088706qp063oa>.

Braun, V. and Clarke, V. (2020) 'Can I use TA? Should I use TA? Should I not use TA? Comparing reflexive thematic analysis and other pattern-based qualitative analytic approaches', *Counselling and Psychotherapy Research*, 21(1), pp. 37–47. Available at: <https://doi.org/10.1002/capr.12360>.

British Association for Music Therapy (ND) What is Music Therapy? Available at: <https://www.bamt.org/music-therapy/what-is-music-therapy> (Accessed: 29th November 2024).

Bryman, A. (2016a) 'Thematic Analysis', in *Social Research Methods* (5th Edition). Oxford: Oxford University Press, pp. 584-588.

Bryman, A. (2016b) 'Glossary', in *Social Research Methods* (5th Edition). Oxford: Oxford University Press, pp. 688-697.

Chanda, M.L. and Levitin, D.J. (2013) 'The neurochemistry of music', *Trends in cognitive sciences*, 17(4), pp. 179–193. Available at: <https://doi.org/10.1016/j.tics.2013.02.007>.

Chanson, J. B., Echaniz-Laguna, A., Vogel, T., Mohr, M., Benoild, A., Kaltenbach, G., Kiesmann, M. (2010) 'TDP43-positive intraneuronal inclusions in a patient with motor neuron disease and Parkinson's disease', *Neurodegenerative Diseases*, 7(4), pp. 260-264. Available at: <https://doi.org/10.1159/000273591>.

Chiltern Music Therapy (2019) '*Sing To Beat Parkinson's Exercises and Resources*', Internal Report, Unpublished.

Creswell, J.W. (2013) 'Case Study Research', in *Qualitative inquiry and research design : choosing among five approaches* (3rd Edition). Thousand Oaks, California: Sage, pp.97-102.

Cross, I., Laurence, F., and Rabinowitch T-C,. (2015) 'Empathy and creativity in group musical practices: towards a concept of empathic creativity', in McPherson, G. and Welch, G. (ed.) *The Oxford Handbook of Music Education* (2nd Edition). Oxford: Oxford University Press, pp. 1-21.

Dargin, T.C. and Searl, J. (2015) 'Semi-Occluded Vocal Tract Exercises: Aerodynamic and Electroglottographic Measurements in Singers', *Journal of voice*, 29(2), pp. 155–164. Available at: <https://doi.org/10.1016/j.jvoice.2014.05.009>.

Daykin, M., Mansfield, L., Meads, C., Julier, G., Tomlinson, A., Payne, A. Grigsby Duffy, L., Lane, J., D'Innocenzo, G., Burnett, A., Kay, T., Dolan, P., Testoni, S. and Victor, C. (2018) 'What works for wellbeing? A systematic review of wellbeing outcomes for music and singing in adults', *Perspectives in Public Health*, 138(1), pp. 39–46. Available at: <https://doi.org/10.1177/1757913917740391>.

dos Santos, A.P., Troche, M.S., Berretin-Felix, G., Barbieri, F.A., Brasolotto, A.G. and Silverio, K.C.A. (2022) 'Effects of Resonance Tube Voice Therapy on Parkinson's Disease: Clinical Trial', *Journal of voice*, 38(6), pp. 1386-1396. Available at: <https://doi.org/10.1016/j.jvoice.2022.04.016>.

Duffy, J.R. (2013) 'Defining, Understanding, and Categorizing Motor Speech Disorders' in *Motor Speech Disorders: Substrates, Differential Diagnosis, and Management* (Third edition). Saint Louis: Elsevier, pp. 3-4.

Edge, R., Mills, R., Tennant, A., Diggle, P.J. and Young, C.A. (2020) 'Do pain, anxiety and depression influence quality of life for people with amyotrophic lateral sclerosis/motor neuron disease? A national study reconciling previous conflicting literature', *Journal of neurology*, 267(3), pp. 607–615. Available at: <https://doi.org/10.1007/s00415-019-09615-3>.

Farhi, D. (1996) 'The Anatomy of Breathing – How the Diaphragm Moves', in *The Breathing Book* (1st Edition). New York: Henry Holt and Company LLC, pp.54.

Ford, J.H., Addis, D.R. and Giovanello, K.S. (2011) 'Differential neural activity during search of specific and general autobiographical memories elicited by musical cues', *Neuropsychologia*, 49(9), pp. 2514–2526. Available at: <https://doi.org/10.1016/j.neuropsychologia.2011.04.032>.

Gibbons, C.J., Thornton, E.W. and Young, C.A. (2013) 'The patient experience of fatigue in motor neurone disease', *Frontiers in psychology*, 4, pp. 1-9. Available at: <https://doi.org/10.3389/fpsyg.2013.00788>.

Given, L.M. and Given, L.M. (2008) 'Researcher-Participant Relationships' in The SAGE Encyclopedia of Qualitative Research Methods. 1st edn. Thousand Oaks: SAGE Publications, Incorporated. Available at: <https://doi.org/10.4135/9781412963909.n388>.

Good, A. and Russo, F.A. (2021) 'Changes in mood, oxytocin, and cortisol following group and individual singing: A pilot study', *Psychology of music*, 50(4), pp. 1340-1347. Available at: <https://doi.org/10.1177/03057356211042668>.

Haneishi, E. (2001) 'Effects of a Music Therapy Voice Protocol on Speech Intelligibility, Vocal Acoustic Measures, and Mood of Individuals with Parkinson's Disease', *The Journal of music therapy*, 38(4), pp. 273–290. Available at: <https://doi.org/10.1093/jmt/38.4.273>.

Harris, R., Leenders, K.L. and de Jong, B.M. (2016) 'Speech dysprosody but no music "dysprosody" in Parkinson's disease', *Brain and language*, 163, pp. 1–9. Available at: <https://doi.org/10.1016/j.bandl.2016.08.008>.

Harris, M., Thomas, G., Thomas, M., Cafarella, P., Stocks, A., Greig, J., and McEvoy, R.D. (2018) 'Supporting wellbeing in motor neurone disease for patients, carers, social networks, and health professionals: A scoping review and synthesis', *Palliative & supportive care*, 16(2), pp. 228–237. Available at: <https://doi.org/10.1017/S1478951517000700>.

Health & Care Professions Council (2023) Speech and language therapists. Available at: <https://www.hcpc-uk.org/standards/standards-of-proficiency/speech-and-language-therapists/> (Accessed: 24th January 2025).

Hiller-Sturmhöfel, S. and Bartke, A. (1998) 'The endocrine system: an overview', *Alcohol Health and Research World*, 22(3), pp. 153–164.

Higgins, A.N. and Richardson, K.C. (2019) 'The Effects of a Choral Singing Intervention on Speech Characteristics in Individuals with Parkinson's Disease: An Exploratory Study', *Communication disorders quarterly*, 40(4), pp. 195–205. Available at: <https://doi.org/10.1177/1525740118783040>.

Hine, R. (ed.) (2019a) 'Hormone', in *A Dictionary of Biology*. Eighth edition. Oxford: Oxford University Press.

Hine, R. (ed.) (2019b) 'Endorphin', in *A Dictionary of Biology*. Eighth edition. Oxford: Oxford University Press.

Hyman, S.E. (2005) 'Neurotransmitters', *Current biology*, 15(5), pp. R154–R158. Available at: <https://doi.org/10.1016/j.cub.2005.02.037>.

Irons, J.Y., Coren, E., Young, M.K., Steward, D.E., Gschwandtner, M and Mellick, G.D. (2019) 'Singing for people with Parkinson's disease', *Cochrane database of systematic reviews*, 2019(2). Available at: <https://doi.org/10.1002/14651858.CD013279>.

Irons, J.Y., Hancox, G., Vella-Burrows, T., Han, E-Y., Chong, H-J., Sheffield, D. and Stewart, D.E. (2021) 'Group singing improves quality of life for people with Parkinson's: an international study', *Aging & mental health*, 25(4), pp. 650–656. Available at: <https://doi.org/10.1080/13607863.2020.1720599>.

Janata, P., Tomic, S.T. and Rakowski, S.K. (2007) 'Characterisation of music-evoked autobiographical memories', *Memory*, 15(8), pp. 845–860. Available at: <https://doi.org/10.1080/09658210701734593>.

Kaiser, A.P. and Berntsen, D. (2023) 'The cognitive characteristics of music-evoked autobiographical memories: Evidence from a systematic review of clinical investigations', *Wiley interdisciplinary reviews: Cognitive science*, 14(3), pp. 1-29. Available at: <https://doi.org/10.1002/wcs.1627>.

Kamrani-Sharif, R., Hayes, A.W., Gholami, M., Salehirad, M., Allahverdikhani, M., Motaghinejad, M. and Emanuele, E. (2023) 'Oxytocin as neuro-hormone and neuro-regulator exert neuroprotective properties: A mechanistic graphical review', *Neuropeptides (Edinburgh)*, 101(), pp. 1-19. Available at: <https://doi.org/10.1016/j.npep.2023.102352>.

Kang, J., Scholp, A. and Jiang, J.J. (2018) 'A Review of the Physiological Effects and Mechanisms of Singing', *Journal of voice*, 32(4), pp. 390–395. Available at: <https://doi.org/10.1016/j.jvoice.2017.07.008>.

Keeler, J.R., Roth, E.A., Neuser, B.L., Spitsbergen, J.M., Waters, D.J.M., and Vianney, J.M. (2015) 'The neurochemistry and social flow of singing: bonding and oxytocin', *Frontiers in human neuroscience*, 9:518, pp. 1-10. Available at: <https://doi.org/10.3389/fnhum.2015.00518>.

Kolomeytseva, A.T.A., Fachner, J.C. and Street, A.J. (2023) 'Music.ALS Case Studies: Clinical Perspectives on a Home-Based Music Therapy Treatment to Improve Breathing, Speech, Swallowing and Cough of Persons with Amyotrophic Lateral Sclerosis', *European Society of Medicine*, 11(12) pp. 1-12. Available at: <https://doi.org/10.18103/mra.v11i12.4795>.

Lackie, J.M. (2019a) 'Dopamine', in A dictionary of biomedicine. Second edition. Edited by Nation, B. Oxford: Oxford University Press.

Latif, S., Jahangeer, M., Maknoon Razia, D., Ashiq, M., Ghaffar, A., Akram, M., El Allam, A., Bouyahya, A., Garipova, L., Ali Shariati, M., Thiruvengadam, M. and Azam Ansari, M. (2021) 'Dopamine in Parkinson's disease', *Clinica chimica acta*, 522, pp. 114–126. Available at: <https://doi.org/10.1016/j.cca.2021.08.009>.

Lee, S.J., Dvorak, A.L. and Manternach, J.N. (2024) 'Therapeutic Singing and Semi-occluded Vocal Tract Exercises for Individuals with Parkinson's Disease: A Randomized Controlled Trial of a Single Session Intervention', *The Journal of music therapy*, 61(2), pp. 132–167. Available at: <https://doi.org/10.1093/jmt/thae004>.

Lewis, A., Cave, P., Stern, M., Welch, L., Taylor, K., Russell, J., Doyle, A-M., Russall, A-M., McKee, H., Clift, S., Bott, J. and Hopkinson, N.S. (2016) 'Singing for Lung Health-a systematic review of the literature and consensus statement', *NPJ primary care respiratory medicine*, 26(1), pp. 16080–16080. Available at: <https://doi.org/10.1038/npjpcrm.2016.80>.

Lulé, D., Kübler, A and Ludolph, A.C. (2019) 'Ethical Principles in Patient-Centered Medical Care to Support Quality of Life in Amyotrophic Lateral Sclerosis', *Frontiers in neurology*, 10(256), pp.1-8. Available at: <https://doi.org/10.3389/fneur.2019.00259>.

Machado Sotomayor, M.J., Manuel, J., Arufe-Giráldez, V., Ruíz-Rico, G. and Navarro-Patón, R. (2021) 'Music Therapy and Parkinson's Disease: A Systematic Review from 2015–2020', *International journal of environmental research and public health*, 18(21), pp. 1-16. Available at: <https://doi.org/10.3390/ijerph18211618>.

Makashay, M.J., Cannard, K.R. and Solomon, N.P. (2015) 'Speech-related fatigue and fatigability in Parkinson's disease' *Clinical linguistics & Phonetics*, 29(1), pp. 27-45. Available at: <https://doi.org/10.3109/02699206.2014.951901>.

Malone, C. and Wachholtz, A. (2018) 'The Relationship of Anxiety and Depression to Subjective Well-Being in a Mainland Chinese Sample', *Journal of religion and health*, 57(1), pp. 266–278. Available at: <https://doi.org/10.1007/s10943-017-0447-4>.

Mertel, K. (2014) 'Oral Motor and Respiratory Exercises (OMREX)' in: Thaut, M.H. & Hoemberg V. (eds) *Handbook of Neurologic Music Therapy*. Oxford University Press, pp. 161-178.

Miller, N., Noble, E., Jones, D. and Burn, D. (2006) 'Life with communication changes in Parkinson's disease', *Age and ageing*, 35(3), pp. 235–239. Available at: <https://doi.org/10.1093/ageing/afj053>.

Mind (2023) How to improve your mental wellbeing. Available at: <https://www.mind.org.uk/information-support/tips-for-everyday-living/wellbeing> (Accessed: 18th November 2024).

Motor Neurone Disease Association (MNDA) (2023a) What is MND. Available at: <https://www.mndassociation.org/about-mnd/mnd-explained/what-is-mnd> (Accessed: 14th October 2024).

Motor Neurone Disease Association (MNDA) (2023b) Access to Psychological Support. Available at: <https://www.mndassociation.org/media/4004> (Accessed: 14th October 2024).

Motor Neurone Disease Association (MNDA) (2023c) Dysarthria. Available at: <https://www.mndassociation.org/professionals/management-of-mnd/dysarthria> (Accessed: 7th December 2024).

Motor Neurone Disease Association (MNDA) (2024) MND SMART. Available at: <https://www.mndassociation.org/research/clinical-trials/treatment-trials/mnd-smart> (Accessed: 7th December 2024).

Munster, M., Pedrosa, A., Künkler, C. and Pedrosa, D. (2024) 'The Quality in Quality of Life in Parkinson's Disease: A Qualitative Meta-Synthesis', *Movement disorders clinical practice (Hoboken, N.J.)*, 11(7), pp. 761–769. Available at: <https://doi.org/10.1002/mdc3.14063>.

National Cancer Institute (ND) Diaphragmatic Breathing. Available at: <https://www.cancer.gov/publications/dictionaries/cancer-terms/def/diaphragmatic-breathing> (Accessed: 23rd January 2025).

National Health Service (2022a) Parkinson's Disease. Available at: <https://www.nhs.uk/conditions/parkinsons-disease/> (Accessed: 14th October 2024).

National Health Service (2022b) Parkinson's Disease Treatment. Available at: <https://www.nhs.uk/conditions/parkinsons-disease/treatment/> (Accessed: 6th December 2024).

National Health Service Cambridge University Hospitals (2023) Semi occluded vocal tract exercises. Available at: <https://www.cuh.nhs.uk/patient-information/semi-occluded-vocal-tract-exercises> (Accessed: 20th January 2025).

National Health Service (ND) Allied Health Professions. Available at: <https://www.england.nhs.uk/ahp/role/> (Accessed: 29th November 2024).

National Health Service – East Sussex Healthcare (ND) Parkinson's Disease and Communication Difficulties. Available at: <https://www.esht.nhs.uk/service/speech-and-language-therapy/communication-difficulties/parkinsons/parkinsons-disease-and-communication-difficulties/> (Accessed: 7th December 2024).

National Institute for Health and Care Excellence (2019) Motor neurone disease: assessment and management. Available at: <https://www.nice.org.uk/guidance/ng42/ifp/chapter/breathing> (Accessed: 30th December 2024).

Neumann, I.D. and Landgraf, R. (2012) 'Balance of brain oxytocin and vasopressin: implications for anxiety, depression, and social behaviors', *Trends in neurosciences (Regular ed.)*, 35(11), pp. 649–659. Available at: <https://doi.org/10.1016/j.tins.2012.08.004>.

Nix, J. and Simpson, C.B. (2008) 'Voice Research and Technology: Semi-Occluded Vocal Tract Postures and Their Application in the Singing Voice Studio', *Journal of singing*, 64(3), pp. 339–342.

Palmer, A.D., Newsom, J.T. and Rook, K.S. (2016) 'How does difficulty communicating affect the social relationships of older adults? An exploration using data from a national survey', *Journal of communication disorders*, 62, pp. 131–146. Available at: <https://doi.org/10.1016/j.jcomdis.2016.06.002>.

Parkinson's UK (2022) What causes Parkinson's? Available at: <https://www.parkinsons.org.uk/information-and-support/what-causes-parkinsons> (Accessed: 2nd December 2024).

Pearce, E., Launay, J., Machin, A., and Dunbar, R.I.M. (2016) 'Is Group Singing Special? Health, Well-Being and Social Bonds in Community-Based Adult Education Classes', *Journal of community & applied social psychology*, 26(6), pp. 518-533. Available at: <https://doi.org/10.1002/casp.2278>.

Perepezko, K., Hinkle, J.T., Shepard, M.D., Fischer, N., Broen, M.P.G., Leentjens, A.F.G., Gallo, J.J. and Pontone, G.M. (2019) 'Social role functioning in Parkinson's disease: A mixed-methods systematic review', *International journal of geriatric psychiatry*, 34(8), pp. 1128–1138. Available at: <https://doi.org/10.1002/gps.5137>.

Physiopedia (ND) Diaphragmatic Breathing Exercises. Available at: [https://www.physio-pedia.com/Diaphragmatic Breathing Exercises](https://www.physio-pedia.com/Diaphragmatic_Breathing_Exercises) (Accessed: 23rd January 2025).

Pizzino, G., Irrera, N., Cucinotta, M., Pallio, G., Mannino, F., Arcoraci, V., Squadrito, F., Altavilla, D. and Bitto, A. (2017) 'Oxidative Stress: Harms and Benefits for Human Health', *Oxidative medicine and cellular longevity*, 2017(), pp. 1–13. Available at: <https://doi.org/10.1155/2017/8416763>.

Poewe, W., Seppi, K., Tanner, C.M., Halliday, G.M., Brundin, P., Volkman, J., Schrag, A-E. and Lang, A.E. (2017) 'Parkinson disease', *Nature reviews. Disease primers*, 3(1), pp. 1-21. Available at: <https://doi.org/10.1038/nrdp.2017.13>.

Ramaswamy, M., Philip, J.L., Priya, V., Priyadarshini, S., Ramasamy, M., Jeevitha, G.C., Mathkor, D.M., Haque, S., Dabaghzadeh, F., Bhattacharya, P and Ahmad, F. (2024) 'Therapeutic use of music in neurological disorders: A concise narrative review', *Heliyon*, 10(16), pp. 1-11. Available at: <https://doi.org/10.1016/j.heliyon.2024.e35564>.

Riaz, Z., Richardson, G.S., Huajin, J., Zenitsky, G., Vellareddy, A., Kanthasamy, A. and Kanthasamy, A.G. (2024) 'Nuclear pore and nucleocytoplasmic transport impairment in oxidative stress-induced neurodegeneration: relevance to molecular mechanisms in Pathogenesis of Parkinson's and other related neurodegenerative diseases', *Molecular neurodegeneration*, 19(1), pp. 1–21. Available at: <https://doi.org/10.1186/s13024-024-00774-0>.

Royal Brompton & Harefield Hospitals (2017) Toolkit for managing breathlessness. Available at: <https://www.rbht.nhs.uk/sites/nhs/files/PILs/Toolkit%20for%20managing%20breathlessness%20-%20July%202017.pdf> (Accessed: 23rd January 2025).

Royal College of Speech and Language Therapists (ND) What is speech and language therapy? Available at: <https://www.rcslt.org/speech-and-language-therapy/> (Accessed: 24th January 2025).

Royal College of Speech and Language Therapists (2024) Supporting people living with motor neurone disease. Available at: <https://www.rcslt.org/wp-content/uploads/media/Project/RCSLT/rcslt-motor-neurone-factsheet.pdf> (Accessed: 6th January 2025).

Schladt, T.M., Nordmann, G.C., Emilius, R., Kudielka, B.M., De Jong, T.R. and Neumann, I.D. (2017) 'Choir versus Solo Singing: Effects on Mood, and Salivary Oxytocin and Cortisol Concentrations', *Frontiers in human neuroscience*, 11:430, pp. 1-9. Available at: <https://doi.org/10.3389/fnhum.2017.00430>.

Schlüter, D.K., Tennant, A., Mills, R., Diggle, P.J. and Young, C.A. (2018) 'Risk factors for social withdrawal in amyotrophic lateral sclerosis/motor neurone disease', *Amyotrophic lateral sclerosis and frontotemporal degeneration*, 19(7–8), pp. 591–598. Available at: <https://doi.org/10.1080/21678421.2018.1508477>.

Simpson, S., Smith, S., Furlong, M., Ireland, J and Giebel, C. (2020) 'Supporting access to activities to enhance well-being and reduce social isolation in people living with motor neurone disease', *Health & social care in the community*, 28(6), pp. 2282–2289. Available at: <https://doi.org/10.1111/hsc.13049>.

Speech Therapy For All (ND) Understanding Parkinson's Disease and Its Effects on Speech Available at: <https://www.speechtherapyforall.com/blog/understanding-parkinsons-disease-and-its-effects-on-speech>(Accessed: 23rd January 2025).

SLT (ND) Dysarthria. Available at: <https://www.slt.co.uk/conditions/speech-disorders/dysarthria/> (Accessed: 7th December 2024).

Stegemöller, E.L., Hurt, T.R., O'Connor, M.C., Camp, R.D., Green, C.W., Pattee, J.C. and Williams, E.K. (2017) 'Experiences of Persons with Parkinson's Disease Engaged in Group Therapeutic Singing', *The Journal of music therapy*, 54(4), pp. 405–431. Available at: <https://doi.org/10.1093/jmt/thx012>.

Takahashi, H., Snow, B.J., Bhatt, M.H., Peppard, R., Eisen, A. and Calne, D.B. (1993) 'Evidence for a dopaminergic deficit in sporadic amyotrophic lateral sclerosis on positron emission scanning', *The Lancet (British edition)*, 342(8878), pp. 1016–1018. Available at: [https://doi.org/10.1016/0140-6736\(93\)92878-W](https://doi.org/10.1016/0140-6736(93)92878-W).

Tamplin, J. (2008) 'A pilot study into the effect of vocal exercises and singing on dysarthric speech', *NeuroRehabilitation*, 23(3), pp. 207–216. Available at: <https://doi.org/10.3233/nre-2008-23302>.

Tamplin, J., Morris, M.E., Marigliani, C., Baker, F.A., Noffs, G. and Vogel, A.P. (2020) 'ParkinSong: Outcomes of a 12-Month Controlled Trial of Therapeutic Singing Groups in Parkinson's Disease', *Journal of Parkinson's disease*, 10(3), pp. 1217–1230. Available at: <https://doi.org/10.3233/JPD-191838>.

Thaut, C.P. (2014) 'Vocal Intonation Therapy (VIT)' in: Thaut, M.H. & Hoemberg V. (eds) *Handbook of Neurologic Music Therapy*. Oxford University Press, pp. 179-184.

Titze, I. (2018) 'Major Benefits of Semi-Occluded Vocal Tract Exercises', *Journal of singing*, 74(3), pp. 311–312.

Van Hooren, M.R.A., Baijens, L.W.J., Vos, R., Pilz, W., Juijpers, L.M.F., Kremer, B and Michou, E. (2016) 'Voice- and swallow-related quality of life in idiopathic Parkinson's disease', *The Laryngoscope*, 126(2), pp. 408–414. Available at: <https://doi.org/10.1002/lary.25481>.

Voice Science Works (ND) SOVT Exercises. Available at: <http://www.voicescienceworks.org/sovt-exercises.html> (Accessed: 20th January 2025).

Wason, P.C. (1960) 'On the failure to eliminate hypotheses in a conceptual task', *Quarterly journal of experimental psychology*, 12(3), pp. 129–140. Available at: <https://doi.org/10.1080/17470216008416717>.

Weinstein, D., Launay, J., Pearce, E., Dunbar, R.I.M and Stewart, L. (2016) 'Singing and social bonding: changes in connectivity and pain threshold as a function of group size', *Evolution and human behavior*, 37(2), pp. 152–158. Available at: <https://doi.org/10.1016/j.evolhumbehav.2015.10.002>.

Nerenberg, J. (2024) The Power of Straw Phonation: Exploring SOVT Exercises. Available at: <https://www.torontospeechtherapy.com/blog/2024/the-power-of-straw-phonation-exploring-sovt-exercises> (Accessed: 20th January 2025).

Williams, E., Dingle, G.A. and Clift, S. (2018) 'A systematic review of mental health and wellbeing outcomes of group singing for adults with a mental health condition', *European journal of public health*, 28(6), pp. 1035–1042. Available at: <https://doi.org/10.1093/eurpub/cky115>.

World Health Organization (2022) Mental Health. Available at: <https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response> (Accessed: 18th November 2024).

World Health Organization (ND) WHOQOL: Measuring Quality of Life. Available at: <https://www.who.int/tools/whoqol> (Accessed: 18th November 2024).

Yarnall, A., Archibald, N. and Burn, D. (2012) 'Parkinson's disease', *Medicine (Abingdon. 1995, UK ed.)*, 40(10), pp. 529–535. Available at: <https://doi.org/10.1016/j.mpmed.2012.07.008>.

Yinger, O.S. and Lapointe, L.L. (2012) 'The Effects of Participation in a Group Music Therapy Voice Protocol (G-MTVP) on the Speech of Individuals with Parkinson's Disease', *Music therapy perspectives*, 30(1), pp. 25–31. Available at: <https://doi.org/10.1093/mtp/30.1.25>.

Young, C.A., Ealing, J., McDermott, C., Williams, T., Al-Chalabi, A., Majeed, T., Burke, G., Pinto, A., Dick, D., Talbot, K., Harrower, T., Walsh, J., Chandran, S., Hanemann, C.O., Mills, R. and Tennant, A. (2019) 'The relationships between symptoms, disability, perceived health and quality of life in amyotrophic lateral sclerosis/motor neuron disease', *Amyotrophic lateral sclerosis and frontotemporal degeneration*, 20(5–6), pp. 317–327. Available at: <https://doi.org/10.1080/21678421.2019.1615951>.

Zhang, X-Y., Song, Y-C., Liu, C-B., Qin, C., Liu, S-H. and Li, J-J (2021) 'Effectiveness of oral motor respiratory exercise and vocal intonation therapy on respiratory function and vocal quality in patients with spinal cord injury: a randomized controlled trial', *Neural regeneration research*, 16(2), pp. 375–381. Available at: <https://doi.org/10.4103/1673-5374.290909>.

Zhao, N., Yang, Y., Zhang, L., Zhang Q., Balbuena, L., Ungvari, G., Zang, Y. and Xiang, Y. (2021) 'Quality of life in Parkinson's disease: A systematic review and meta-analysis of comparative studies', *CNS neuroscience & therapeutics*, 27(3), pp. 270–279. Available at: <https://doi.org/10.1111/cns.13549>.

Appendix A

Neurotransmitters and Hormones - Additional

Neurotransmitters and Hormones – Additional

Dopamine

Due to reduced dopaminergic function in PD and ALS, the most common form of MND, dopamine would need to be present in the body for singing to affect a change. This would be possible through medications available for PD that aid in production of dopamine, or act as a dopamine substitute (NHS, 2022b). A connection between dopamine and musical reward was suggested by Bonvin, et al. (2007), following compulsive singing caused by dopamine replacement therapy in PD patients who described feeling overwhelmed by the sensation of pleasure it induced. A drug already used to manage PD, which mechanisms include boosting dopamine activity, is currently being tested for MND (Motor Neurone Disease Association, 2024).

Oxytocin

Research indicates that oxytocin can help control homeostatic mechanisms, how the body retains balance through self-regulation to changing conditions, involved with oxidative stress (Kamrani-Sharif, et al., 2023), which is cell and tissue damage caused by an imbalance of oxygen reactive molecules (Pizzino, et al., 2017). In other words, there are not enough antioxidants to detoxify these unstable molecules. Evidence suggests that oxidative stress is a mechanism that contributes to degeneration of motor neurons in MND (Barber, et al., 2006), and other neurological conditions such as PD (Riaz, et al., 2024). Hence, further research in to how to lessen oxidative stress through for example, lifestyle choices that might also include activities such as singing, would be beneficial.

Appendix B

Information Sheet and Signed Consent Form



Jo Warren

jowarrenfreelance@gmail.com

28th October 2024

Dear Participant,

Participant Information Sheet

I would like to invite you to participate in my research project, which has been approved by the University of Wales Trinity Saint David (UWTSD) Research Ethics Committee.

The purpose of the project is to ascertain the impact of singing/vocalizing on mental wellbeing and quality of life in someone diagnosed with a neurodegenerative condition, such as Parkinson's Disease (PD) or Motor Neurone Disease (MND), and if there are any secondary benefits to speech and vocal communication.

I identified you as a participant due to being diagnosed with both PD and MND.

Participation is voluntary. There is no penalty or loss of benefits, to which you are otherwise entitled, should you refuse to participate. If you consent to participate, you may discontinue participation at any time, also without penalty or loss of benefits.

The anticipated time commitment is one hour per week in one-to-one sessions with me, for up to six weeks, at your home address.

I intend to utilize the following procedures:

- Short questionnaires – one before and after each session, and another intermittently over the six weeks. If there are any questions you do not want to answer, you may omit those.
- Observation during sessions, making notes.

- Audio or video recording (whichever you prefer/feel most comfortable with) of you saying select words or phrases at the beginning and end of each session, to observe any change in speech.
- Conduct an interview after the final session, to gain further understanding of your experience. This will include a debrief.

I will conduct a risk assessment prior to the first session, to identify and mitigate any risks to you as the participant, and myself as student research practitioner.

I have an enhanced DBS certificate (# 001781014028) and am registered on the subscription service - renewal is annual, current expiry is 13th May 2025.

Data collected during the research will be processed and treated with full confidentiality:

- For anonymity purposes, I will assign a reference (instead of your name) on all data forms collected - audio/video, notes, questionnaires and interview – and in the report.
- Audio or video recordings will be taken on a passcode protected phone and transferred to a password protected laptop after each session and backed up on a password protected USB stick that will remain at my home address. Recordings will be deleted from phone after transfer.
- Paperwork – handwritten notes / questionnaires / interview – will be stored securely at my home address, digitized and saved on the same laptop and USB stick.
- Digitised personal data and research data will be held securely until the exam board have formally marked the research report and issued a certificate. Physical paperwork will be destroyed/shredded at the end of the research project.
- The report will only be shared with the Voice Study Centre and UWTSD, as part of my studies, via email with VSC and via UWTSD's Moodle platform.

You may request copies of the study and any reports arising from your participation.

Please let me know if you have any questions!

Thank you, and best wishes,

A handwritten signature in black ink, appearing to be 'Jo Warren', with a long horizontal line extending to the right.

Jo Warren

Community Musician and Student Practitioner Researcher



Jo Warren

jowarrenfreelance@gmail.com

28th October 2024

CONSENT FORM

Research Project Title

Impact of singing/vocalising on mental wellbeing and quality of life in a person diagnosed with both Parkinson's Disease and Motor Neurone Disease, and ascertain if there are any benefits to speech and vocal communication

Consent to take part in research

- I, the research participant, voluntarily agree to participate in this research study.
- I understand that even if I agree to participate now, I can withdraw at any time.
- I understand that the anticipated time commitment is one hour per week in one-to-one sessions with the student practitioner researcher, for up to six weeks.
- I understand that the student practitioner researcher holds a current and valid enhanced DBS certificate.
- I understand that the student practitioner researcher will conduct a risk assessment prior to the first session.
- I understand that I can refuse to answer any question involved during the research process without explanation or consequences of any kind.
- I have received, in writing, the information sheet describing the purpose and nature of the study and have had the opportunity to ask questions.
- I understand that participation involves use of singing/vocalising and data collection from me through use of audio or video recordings, short questionnaires, observation by the student practitioner researcher and interview.

- I understand all information I provide for this study will be treated confidentially.
- I understand that in the report on results of this research my identity will remain anonymous (by changing my name).
- I understand that the signed consent form, audio or video recordings, and digitised notes, questionnaires and interview, will be stored securely on a password protected laptop and backed up on a password protected USB stick that will remain at the student practitioner researcher's home address, until the exam board have formally marked the research report and issued a certificate.
- I understand that physical paperwork will be destroyed/shredded at the end of the research project.
- I understand that if I inform the student practitioner researcher that myself or someone else is at risk of harm, they may have to report this to the relevant authorities - they will discuss this with me first but may be required to report with or without my permission.
- I understand that I am entitled to access the information I have provided at any time whilst it is in storage as specified above.

Signature of research participant



Date: 5th Nov 2024

Signature of Community Musician and Student Practitioner Researcher



Name: Jo Warren

Date: 28th October 2024

I believe the participant is giving informed consent to participate in this study.

Appendix C

Session Questions, Answers and Notes

(black font = questions, blue font = answers and notes typed up afterwards)



Jo Warren

jowarrenfreelance@gmail.com

QUESTIONS – Session 1

Pre sessions

1. When were you diagnosed with Parkinson's Disease? When were you diagnosed with Motor Neurone Disease? (month/year)

9.5 years ago (PD). 8.5 years ago (MND) – can't remember type of MND. Said could look it up for me if needed. I replied it wasn't compulsory/only if they felt comfortable with sharing that info.

2. How would you describe your well-being generally and quality of life?

"Not very good at the minute".

3. How do you feel about your speech/vocal communication?

"It's poor, frustrating". "My voice is better than iPad though". "Difficult to be part of a conversation, as already moved on".

4. What are your preferred communication methods?

"Speaking still (as much as possible)"

5. What makes you happy?

Grandchildren (7) and Great Grandchild (1)

6. What activities or hobbies do you enjoy?

Still like music. Listens to it a lot. Tries to play guitar, struggles.

Car journeys (with wife driving, as unable to drive now)

Immediately pre 1st session

1. How are you feeling right now – both physically and emotionally?

“Bit tired. Physically, generally feel okay. Emotionally, feel a bit down.”

2. What have you been doing earlier today?

Watching TV – ‘Neighbours’.

We laughed at it being back on/some of the characters from years ago still being in it.

3. Is there anything else you would like to share?

“Not that I can think of”.

Immediately after 1st session

1. Have you noticed any change in how you are feeling? If so, please describe.

“Feel happier. Still a bit tired. Physically okay”.

2. Have you noticed any difference in your speech/vocal communication? If so, can you describe what is or feels different?

“I think I said those 5 words clearer”.

3. What are your plans between now and our next session? Is there anything you are particularly looking forward to?

Might be able to play guitar with me at next session.

“Not that I can think of”.

4. Is there anything else you would like to share?

“Can’t think of anything”.

Notes

During session asked about artists/music/songs liked – mentioned Rolling Stones, particularly 'Brown Sugar'. Said we'd do next time.

Knew all the songs in the session. Mentioned he likes The Beatles. A memory was triggered by 'Show Me the Way to Go Home' – it was the song sung on a coach trip, heading back.

In chat afterwards, mentioned that wife encourages him to go out (he worries about his speech/joining in with conversations).

During post-session questions I reiterated that the sessions are all about gaining their perspective - being honest about how they feel (and not saying what they think I might be hoping for)! For example, if they didn't feel any different from pre to post session, then it is not a problem at all to say that. I will not take it personally.

I got the impression that this might be one of the only times during the week where he is doing something other than seeing family, watching TV or listening to music, going for a drive, or attending appointments. Minimal social activity?



Jo Warren

jowarrenfreelance@gmail.com

QUESTIONS – Session 2

Immediately pre

1. How have you been this past week?

“Okay”.

2. How are you feeling right now – both physically and emotionally?

“Okay. Slightly tired. Would say I’m an 8 or 9 out of 10”.

3. Have you played guitar since our last session? If so, how was it?

Yes, had a little go, on the electric guitar. Wasn’t very good though.

Listened to lots of music recently.

4. Any music you’ve listened to recently that you’d recommend?

Judah Kelly (was on Australian ‘The Voice’) – ‘Count on Me’

Likes Chris Isaacs, Phil Collins, The Corrs, Simon & Garfunkel, Jude Cole

Uses Apple Music.

5. Is there anything else you would like to share?

Participant’s son came round on Sunday. He showed me their ‘Christmas Book’ (his son is a guitar teacher, and designed/produced the book for teaching).

Immediately post

1. Have you noticed any change in how you are feeling? If so, please describe.

“Yes – happier, and not so tired. 10 out of 10!”

2. Have you noticed any difference in your speech/vocal communication? If so, can you describe what is or feels different?

“Felt it was slightly clearer on test at the end”.

3. Asked if found it easier to sing than speak (or if no difference noticed)?

“Brown Sugar was difficult to sing. Otherwise, found easy to sing other songs”.

(Brown Sugar was the song requested by participant at prior session).

Did not refer to speech in answer, and I, in noting response, did not follow up – made a note to ask again at a subsequent session.

4. Asked how found using percussion and singing at the same time?

“I found using the tambourine quite difficult. Easier to concentrate on both towards the end of session”.

5. Is there anything else you’d like to share?

“I enjoyed it. Always nice to see you”. Otherwise, nothing else to share.

Notes

I wonder if carefully instructed use of percussion with voice could be incorporated in next session (rather than participant playing freely).

Said if they would like to play guitar during a future session, to just have it ready to go!

The switching of hand holding/tapping tambourine during session was prompted by me recalling melodic intonation therapy in a prior module (ie. using left hand to tap, participant is right-handed).

Focus on songs that are easier to sing in sessions (perhaps listening to requested songs that are not as easy to sing – either with or without the recording).



Jo Warren

jowarrenfreelance@gmail.com

QUESTIONS – Session 3

Immediately pre

1. How have you been this past week/what have you been up to?

“Okay. Was out this morning with a mate”. He’d just got back from holiday. We’ve been friends for 20 years.

2. How are you feeling right now – both physically and emotionally?

“Okay. About an 8/10. Physically a little tired, been up since 3am”.

3. Have you played guitar since our last session? If so, how was it?

“Yes, I have – three times, I think”. Practiced ‘Brown Sugar’ on electric guitar.

4. How much time do you spend listening to music per week?

“6-8 hours per week, and when I can’t sleep, I put something on then”.

5. Is there anything else you would like to share?

“I can’t think of anything else, no” (we both laughed).

Immediately post

1. Have you noticed any change in how you are feeling? If so, please describe.

“I’m feeling happier. 9 or 9.5 / 10”.

2. Have you noticed any difference in your speech/vocal communication? If so, can you describe what is or feels different?

“I noticed I said the test words easier at the end”.

3. Is there anything else you'd like to share?

“Nothing else to add”.

4. As you know, I can't use your real name in the report but would like to use a name instead of referring to 'participant' throughout the report. Do you have a preference/any suggestions on the name I could use?

Chose the name 'Mark'

Notes

Participant stated it was difficult to concentrate on both singing and playing a percussive instrument last session. Use of additional instrumentation could influence responses negatively, particularly if struggling, also focus of research is on use of voice, hence decided not to incorporate percussion during this session.

'You Can't Hurry Love' – too quick to sing with recording. Did a slower version with just keys and voice. Shows importance of finding a way to access songs which might initially seem out of reach/not accessible. Similar approach with 'A Sky Full of Stars'. Asked if there was another Phil Collins song participant would like to do next time.

Felt connection throughout the session, particularly after 'What A Wonderful World' – was a lovely song to sing together.



Jo Warren

jowarrenfreelance@gmail.com

QUESTIONS – Session 4

Immediately pre

1. How have you been this past week/what have you been up to?

“Been okay generally. Been to hospital. A friend was round yesterday. Went out for a meal at lunch time”.

2. How are you feeling right now – both physically and emotionally?

“6/10 – bit weary/little bit drained. 4/10 emotionally”.

3. Have you played guitar since our last session? If so, how was it?

“Once this last week. Was okay”. Tried playing Teenage Kicks by the Undertones.

4. Have you sung since our last session? If so, how much time did you spend singing?

“No. Should I?” (we laughed)

5. How important is music to you? Has your connection with and use of music changed since your diagnoses, and if so, how?

“Quite important”. Connections have changed over time and taste in music has changed too. “Find it more therapeutic now”. Listen to music a lot more now than used to. Also listen to music when can’t sleep”.

6. Is there anything else you would like to share?

“No”

Immediately post

1. Have you noticed any change in how you are feeling? If so, please describe.

“Feel a little bit better. Still 6/10 physically. Now 7 or 8 / 10 emotionally”.

2. Have you noticed any difference in your speech/vocal communication? If so, can you describe what is or feels different?

“Slightly better, but not as improved as in previous sessions”.

3. Is there anything else you'd like to share?

He was surprised by how emotional he was to 'Father to Son'. Particularly as he listens to it quite a lot and usually okay. Last listened to it on Friday AM. There was no specific memory triggered, just a feeling.

Nothing more to share.

Additional Question

If there was an opportunity to join a local group for music/singing sessions, would you be interested? Or would you prefer 1-2-1?

“No, I'd prefer 1-2-1”.

Notes

During this session there was an overwhelming sense of emotion from singing 'Father to Son'. Participant apologised for being upset - I said there was no need to be sorry at all and not to feel embarrassed. Music and/or singing can catch us in that way unexpectedly! I felt privileged to share this moment with him.



Jo Warren

jowarrenfreelance@gmail.com

QUESTIONS – Session 5

Immediately pre

1. How have you been this past week/what have you been up to?

“Pretty okay. Had Christmas lunch out, with partners. Put Christmas tree up a couple of days ago (Sunday)”.

2. How are you feeling right now – both physically and emotionally?

“Okay – 8/10 (both physical and emotionally)”.

3. Have you played guitar since our last session? If so, how was it?

“Yes – 2 or 3 times”. “Okay”.

4. Have you sung since our last session? If so, how much time did you spend singing?

Tried singing whilst playing guitar. Prefers playing guitar to singing.

5. You mentioned that you’d prefer 1-2-1 sessions (and not to attend a local group) at our last session – why is that?

“Because my singing is so bad”. That’s the only reason. Would prefer 1-2-1 but would consider a local group if I was running it and could get there (music/singing for fun).

6. Is there anything else you would like to share?

“No, not that I can think of”.

Immediately post

1. Have you noticed any change in how you are feeling? If so, please describe.

“Feel a bit happier – 9/10 physically, 10/10 emotionally”.

2. Have you noticed any difference in your speech/vocal communication? If so, can you describe what is or feels different?

“Not much but did find it easier to say ‘Jingle Bells’. Been struggling with speech a bit more than normal recently”.

3. Is there anything else you’d like to share?

Looking forward to Christmas. Going to daughter’s-in-law for Christmas day. Looking forward to spending time with family, grand-daughter, grandson etc. Daughter-in-law trained with a well-known chef (couldn’t remember the name) that has a place/restaurant in Marlow.

Notes

It was lovely to transition to Christmas songs during session – however, participant over-sang mid-way through, and it was the first time, since starting sessions, that we had to stop/have a break for voice rest. Only continued when participant was ready – doing some breathing and gentle vocal glides to warm-up again.



Jo Warren

jowarrenfreelance@gmail.com

QUESTIONS – Session 6

Immediately pre

1. How have you been this past week/what have you been up to?

“Okay. Saw mate Carl this AM. Yesterday we met a friend at the garden centre for coffee, which was nice”. Grand-daughter and great grandson round on Sunday – great grandson slept on his lap, which was “really nice”.

2. How are you feeling right now – both physically and emotionally?

“7/10 – both physically and emotionally”.

3. Have you played guitar or sung since our last session? If so, how was it?

Played guitar twice (including earlier that day). Didn’t sing. Prefers to sing with someone, rather than on own (“to mask my terrible voice”, laughs).

“Used to play and sing, but not singing now – struggle with both at the same time, and doesn’t sound good”.

4. Is there anything else you would like to share?

“No, thing else to share”.

Immediately post

1. Have you noticed any change in how you are feeling? If so, please describe.

"Yes – feeling very happy. 9/10 physically, 10/10 emotionally".

2. Have you noticed any difference in your speech/vocal communication? If so, can you describe what is or feels different?

"Not really, no - feel a bit more tired".

3. Is there anything else you'd like to share?

"Thoroughly enjoyed the time/session".

Final Interview/Debrief

Well-being/QoL – "Not very good at the minute" (first session)

Enjoys – Being with family (very important), seeing friends, listening to music, playing guitar, car journeys and watching Neighbours!

Speech/Vocal Communication – "It's poor, frustrating". "My voice is better than iPad though".

"Difficult to be part of a conversation, as already moved on" (first session).

1. How would you describe your well-being generally and quality of life? What changes, if any, have you noticed over the last six weeks?

"Better than it was, because of approaching Christmas and having fun". Can't think of anything re. any specific changes.

2. Do you feel any differently about your speech/vocal communication? If so, how?

Feels the same as described in first session.

3. Do you find it easier to sing or speak? From a retrieval/pronunciation of words perspective (rather than perceived quality of sound).

"Singing, I think". "Easier to speak when putting on an accent, like Scottish". Then proceeded to demonstrate!

4. How have you found our sessions these last six weeks?

"I've enjoyed them all"

5. Now that our sessions have come to an end, what do you think you will do with this time instead?

"I suppose I'll try and play the guitar instead". "Frustrating as hands aren't what they used to be and I'm finding it difficult to strum now". We talked about alternative ways to access/play guitar, maybe experimenting with pedals and sounds, without need to strum strings. Suggested his son might have ideas (being a guitar teacher).

6. Is there anything else you'd like to share?

"No, not that I can think of".

Notes

Might be interested in coming along to a local group I run (if possible), for music/singing, although preference would be 1-2-1.

As I was leaving, participant's wife commented on how much he has enjoyed the sessions.

Appendix D

Session Plans and Notes

(black font = plan, blue/red font = notes typed up afterwards)



Jo Warren

jowarrenfreelance@gmail.com

Session Plan – Session 1

Pre-session questions: Refer to separate document

Audio record: Drunken Sailor / Don't Worry / Every Moment / Moonlight / Sunshine

Warm-Up/Stretches:

- Diaphragmatic breathing – in through nose, out through mouth (chest mostly still, abdomen in/out – for 4)
- Breath in through nose, out on 'ssss'
- Pretend finger is lit candle – blow out close, mid-range, arm fully extended
- Yawn/facial massage/lip bubbles
- Shoulder rolls to arm stretches
- 'Rollercoaster' (ie. glissando) – Ah's, Ee's, Ooh-Argh's ('pirate')
- Mini scales (5 notes, up and down) – mah's, mee's, moo's – **Not done**
- Good, Bad, Ugly riff (wah's)
- Mahna Mahna

Song: 'Drunken Sailor' (+ suggestions) – on keys (suggestions for sobering up = "bread" and "milk". Sang together.

Song: 'Three Little Birds' – Played on Ukulele. Sang together.

Listening: Participant Request – **Not done (but asked for next time/singing)**

Song: 'Dancing in the Moonlight' – Sang with Toploader recording.

Song: 'Here Comes the Sun' – Sang with Beatles recording.

Song: 'Show Me the Way To Go Home' – Played on keys. Sang together.

Listening/Breath Work: 'Binaural Relaxtion'

Audio record: Drunken Sailor / Don't Worry / Every Moment / Moonlight / Sunshine

Post-session questions: Refer to separate document



Jo Warren

jowarrenfreelance@gmail.com

Session Plan – Session 2

Pre-session questions: Refer to separate document

Audio record: Bring Back My Bonnie / Yellow Submarine / Brown Sugar / We Will Rock You / I Can See Clearly Now

Warm-Up/Stretches:

- Diaphragmatic breathing – in through nose, out through mouth (chest mostly still, abdomen in/out – for 4)
- Breath in through nose, out on 'ssss'
- Pretend finger is lit candle – blow out close, mid-range, arm fully extended
- Yawn/facial massage/lip bubbles
- Shoulder rolls to arm stretches
- 'Rollercoaster' (ie. glissando) – Ah's, Ee's, Ooh-Argh's ('pirate')
- Mini scales (5 notes, up and down) – mah's, mee's, moo's
- Good, Bad, Ugly riff (wah's)
- Mahna Mahna

Song: 'My Bonnie' – Sang through together at first (played keys), then introduced tambourine (with skin) to participant. Held with left hand, hit with right. Asked if right or left-handed (he is right). Asked to switch around on final time around (ie. held with right, hit with left).

Song: 'Yellow Submarine' - participant asked to keep using tambourine whilst singing. Played keys. Sang through twice – second time participant on verses, both together on chorus.

Listening: Participant Request – **not done**

Song: 'Brown Sugar' (participant request) – difficult song to sing. Sang along with The Rolling Stones recording first time around. Second time, participant sang verses with me on keys, together on chorus – slower.

Song: 'We Will Rock You' – introduced Djembe (for joining in with main rhythm). Sang along with Queen recording.

Song: 'I Can See Clearly Now' – participant asked for tambourine again. Sang through together (with me on keys).

Listening/Breath Work: 'Binaural Relaxtion'

Audio record: Bring Back My Bonnie / Yellow Submarine / Brown Sugar / We Will Rock You / I Can See Clearly Now

Post-session questions: Refer to separate document



Jo Warren

jowarrenfreelance@gmail.com

Session Plan – Session 3

Pre-session questions: Refer to separate document

Audio record: When the Saints Go Marching In and Swing Low, Sweet Chariot / Hey Jude, You Can't Hurry Love / A Sky Full Of Stars / What A Wonderful World

Warm-Up/Stretches:

- Diaphragmatic breathing – in through nose, out through mouth (chest mostly still, abdomen in/out – for 4)
- Breath in through nose, out on 'ssss'
- Pretend finger is lit candle – blow out close, mid-range, arm fully extended
- Yawn/facial massage/lip bubbles
- Shoulder rolls to arm stretches
- 'Rollercoaster' (ie. glissando) – Ah's, Ee's, **Ooh's and Ooh-Argh's** ('pirate') – **added in during session**
- Mini scales (5 notes, up and down) – mah's, mee's, moo's
- Good, Bad, Ugly riff (wah's)
- Mahna Mahna
- 'Many Men' (to William Tell Overture)

Song: 'Oh When The Saints' / 'Swing Low, Sweet Chariot' – **attempted as a round! Challenged focus but managed it! Played keys and did acapella.**

Song: 'Hey Jude' – **Played keys. Sang together mostly, with some solo parts.**

Song: 'You Can't Hurry Love' (participant request) – **with recording plus slower on keys/vox afterwards, focusing on chorus. Sang together, with some solo parts.**

Song: 'A Sky Full of Stars' - **with recording. Then went through afterwards on keys/vox – very different feel (more ballad than dance). Sang together.**

Song: 'What A Wonderful World' – **Played keys. Sang together.**

Listening/Breath Work: 'Binaural Relaxtion'

Audio record: When the Saints Go Marching In and Swing Low, Sweet Chariot / Hey Jude,
You Can't Hurry Love / A Sky Full Of Stars / What A Wonderful World

Post-session questions: Refer to separate document



Jo Warren

jowarrenfreelance@gmail.com

Session Plan – Session 4

Pre-session questions: Refer to separate document

Audio record: 'Are You Going to Scarborough Fair?' / 'Don't Worry, Be Happy' / 'Another Day In Paradise' / 'Father To Son' / 'What A Wonderful World'

Warm-Up/Stretches:

- Diaphragmatic breathing – in through nose, out through mouth (chest mostly still, abdomen in/out – for 4)
- Breath in through nose, out on 'ssss'
- Pretend finger is lit candle – blow out close, mid-range, arm fully extended
- Yawn/facial massage/lip bubbles
- Shoulder rolls to arm stretches
- 'Rollercoaster' (ie. glissand) – Ah's, Ee's, Ooh-Argh's ('pirate')
- Mini scales (5 notes, up and down) – mah's, mee's, moo's
- Good, Bad, Ugly riff (wah's)
- Mahna Mahna
- 'Many Men' (to William Tell Overture)

Song: 'Scarborough Fair' – Prompted a memory. Hasn't sung for years. Was in a band in his teens (only ever been in that one band). Also played guitar at church.

Song: 'Don't Worry, Be Happy' – Whistled too! Sang with recording and keys.

Song: 'Another Day In Paradise' (participant request) – Sang with recording and keys.

Song: 'Father To Son' (participant request) – Sang with recording. A little emotional/upset at the end of this song. Supported during and then spoke about it more after session.

Song: 'What A Wonderful World' (Sam Cooke) – Played keys. Sang together.

Listening/Breath Work: 'Binaural Relaxtion'

Audio record: 'Are You Going to Scarborough Fair?' / 'Don't Worry, Be Happy' / 'Another Day In Paradise' / 'Father To Son' / 'What A Wonderful World'

Post-session questions: Refer to separate document



Jo Warren

jowarrenfreelance@gmail.com

Session Plan – Session 5

Pre-session questions: Refer to separate document

Audio record: Always Look On The Bright Side of Life / Ob-La-Di, Ob-La-Da / In The Bleak
Mid-Winter / Silent Night / Jingle Bells

Warm-Up/Stretches:

- Diaphragmatic breathing – in through nose, out through mouth (chest mostly still, abdomen in/out – for 4)
- Breath in through nose, out on 'ssss'
- Pretend finger is lit candle – blow out close, mid-range, arm fully extended
- Yawn/facial massage/lip bubbles
- Shoulder rolls to arm stretches
- 'Rollercoaster' (ie. glissando) – Ah's, Ee's, ~~Ooh-Argg's ('pirate')~~, Oooh's and Ho-Ho-Ho's
- Mini scales (5 notes, up and down) – mah's, mee's, moo's
- Good, Bad, Ugly riff (wah's)
- Mahna Mahna
- 'Many Men' (to William Tell Overture)

Song: 'Always Look on The Bright Side of Life' – Participant whistled! Played keys. Sang together.

Song: 'Ob-La-Di, Ob-La-Da' – Played keys. Sang together.

Song: 'In The Bleak Mid-Winter' (participant request) – Played keys. Sang together. Sang strongly in last two songs, and voice tired by the end – stopped and had some voice rest, then diaphragmatic breathing to relax followed by very gentle vocal glides/sirens when feeling ready to sing again.

Song: 'Silent Night' (participant request) – Played keys. Sang together.

Song: 'Jingle Bells' – Tapped large jingle bells gently during verse, then played strongly during chorus.

Song: Added 'We Wish You a Merry Christmas'

Listening/Breath Work: 'Mistletoe And Holly' Jazz Instrumental – [Enjoyed listening.](#)
[Diaphragmatic breathing throughout, to relax.](#)

Audio record: Always Look On The Bright Side of Life / Ob-La-Di, Ob-La-Da / In The Bleak
Mid-Winter / Silent Night / Jingle Bells

Post-session questions: Refer to separate document



Jo Warren

jowarrenfreelance@gmail.com

Session Plan – Session 6

Pre-session questions: Refer to separate document

Audio record: Twelve Days of Christmas / Little Donkey and Silent Night / Deck the Halls with Boughs of Holly / Merry Christmas Everyone / We Wish You A Merry Christmas

Warm-Up/Stretches:

- Diaphragmatic breathing – in through nose, out through mouth (chest mostly still, abdomen in/out – for 4)
- Breath in through nose, out on 'ssss'
- Pretend finger is lit candle – blow out close, mid-range, arm fully extended
- Yawn/facial massage/lip bubbles
- Shoulder rolls to arm stretches
- 'Rollercoaster' (ie. glissando) – Ah's, Ee's, Ng's (as in 'sing'), Oooh's and Ho-Ho-Ho's
- Mini scales (5 notes, up and down) – mah's, mee's, moo's and ho's
- Good, Bad, Ugly riff (wah's)
- Mahna Mahna
- 'Many Men' (to William Tell Overture)

Song: '12 Days of Christmas' – Played keys. Sang together.

Song/Activity: 'Little Donkey' & 'Silent Night' (sing through, then play jingle bells – to allow for voice rest) - Played keys. Sang together.

Song: 'Deck the Halls with Boughs of Holly' - Played keys. Sang together.

Song: 'Merry Christmas Everyone' – Sang with recording, then chorus together playing keys.

Song: 'We Wish You a Merry Christmas' - Played keys. Sang together.

Listening: 'The Happiest Christmas of All' (Morecambe & Wise) or I'm Walking Backwards for Christmas (The Goons) – [chose song by The Goons](#)

Audio record: Twelve Days of Christmas / Little Donkey and Silent Night / Deck the Halls with Boughs of Holly / Merry Christmas Everyone / We Wish You a Merry Christmas

Post-session questions & final interview: Refer to separate document

Appendix E

Permission Letter, Ethical Approval and Enhanced DBS



Jo Warren
8 Fosse Way
Ealing
London W13 0BZ
jowarrenfreelance@gmail.com

17th August 2024

Dear UWTSD,

RE: What is the impact of creative voicing and singing on mental wellbeing and quality of life in a person diagnosed with a degenerative condition, such as Parkinson's or Motor Neurone Disease? And are there any benefits to speech and vocal communication?

I confirm that I approve of the research proposed into the impact of creative voice and singing on mental wellbeing and quality of life in a person diagnosed with a degenerative condition, such as Parkinson's or Motor Neurone Disease, and to ascertain if there are any benefits to speech and vocal communication. This research is to be carried out by student Jo Warren, a Community Musician based at the above address, during 1-2-1 sessions with the research participant between September 2024 and January 2025.

Kind Regards,

Jo Warren
Community Musician and Student

APPLICATION FOR ETHICAL APPROVAL

RESEARCH STUDENTS

This form is to be completed by the student within **SIX** months for full-time students and **TWELVE** months for part time students, after the commencement of the research degree or following progression to Part Two of your course.

Once complete, submit this form via the **MyTSD Doctoral College Portal** at (<https://mytsd.uwtsd.ac.uk>).

This document is also available in Welsh.

RESEARCH STAFF ONLY

All communications relating to this application during its processing must be in writing and emailed to pgresearch@uwtsd.ac.uk, with the title 'Ethical Approval' followed by your name.

STUDENTS ON UNDERGRADUATE OR TAUGHT MASTERS PROGRAMMES should submit this form (and receive the outcome) via systems explained to you by the supervisor/module leader.

In order for research to result in benefit and minimise risk of harm, it must be conducted ethically. A researcher may not be covered by the University's insurance if ethical approval has not been obtained prior to commencement.

The University follows the OECD Frascati manual definition of **research activity**: "creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications". As such this covers activities undertaken by members of staff, postgraduate research students, and both taught postgraduate and undergraduate students working on dissertations/projects.

The individual undertaking the research activity is known as the "principal researcher".

Ethical approval is not required for routine audits, performance reviews, quality assurance studies, testing within normal educational requirements, and literary or artistic criticism.

Please read the notes for guidance before completing ALL sections of the form.

This form must be completed and approved prior to undertaking any research activity. Please see Checklist for details of process for different categories of application.

SECTION A: About You (Principal Researcher)

1	Full Name:	Joanne Claire Warren			
2	Tick all boxes that apply:	Member of staff:	☐	Honorary research fellow:	☐
	Undergraduate Student	☐	Taught Postgraduate Student	☒	Postgraduate Research Student
3	Institute/Academic Discipline/Centre:	WAPPAR			
4	Campus:	Carmarthen			
5	E-mail address:	jowarrenfreelance@gmail.com			
6	Contact Telephone Number:	07974 409362			
For students:					

7	Student Number:	2317235
8	Programme of Study:	MA Professional Practice (Voice Pedagogy)
9	Director of Studies/Supervisor:	Louise Emanuel/Julie Crossman/Debbie Winter

SECTION B: Approval for Research Activity

1	Has the research activity received approval in principle? (please check the Guidance Notes as to the appropriate approval process for different levels of research by different categories of individual)	YES	☒	NO	☐
					Date
2	If Yes, please indicate source of approval (and date where known): Approval in principle must be obtained from the relevant source prior to seeking ethical approval	Research Degrees Committee	☐		
Institute Research Committee		☐			
Other (write in) WAPPAR Ethics Board Representative		☒			

SECTION C: Internal and External Ethical Guidance Materials

	Please list the core ethical guidance documents that have been referred to during the completion of this form (including any discipline-specific codes of research ethics, location-specific codes of research ethics, and also any specific ethical guidance relating to the proposed methodology). Please tick to confirm that your research proposal adheres to these codes and guidelines. You may add rows to this table if needed.
1	UWTSD Research Ethics & Integrity Code of Practice ☒
2	UWTSD Research Data Management Policy ☒
3	Sound Sense – Music Education Code of Practice ☒

SECTION D: External Collaborative Research Activity

If there are external collaborators then you should gain consent from the contact persons to share their personal data with the university. If there are no external collaborators then leave this section blank and continue to section E.

1	Institution					
2	Contact person name					
3	Contact person e-mail address					
4	Is your research externally funded?	YES	☐	NO	☐	
5	Are you in receipt of a KESS scholarship?	YES	☐	NO	☐	
6	Are you specifically employed to undertake this research in either a paid or voluntary capacity?	Voluntary	YES	☐	NO	☐
7		Employed	YES	☐	NO	☐
8	Is the research being undertaken within an existing UWTSD Athrofa	If YES then the permission question	YES	☐	NO	☐

	Professional Learning Partnership (APLP)?	below does not need to be answered.				
9	Has permission to undertake the research has been provided by the partner organisation?	(If YES attach copy) If NO the application cannot continue	YES	☐	NO	☐

Where research activity is carried out in collaboration with an external organisation

10	Does this organisation have its own ethics approval system?	YES	☐	NO	☐
	If Yes, please attach a copy of any final approval (or interim approval) from the organisation (this may be a copy of an email if appropriate).				

SECTION E: Details of Research Activity

1	Indicative title:	What is the impact of creative voicing and singing on mental wellbeing and quality of life in a person diagnosed with a degenerative condition, such as Parkinson's or Motor Neurone Disease? And are there any benefits to speech and vocal communication?			
2	Proposed start date:	26 th Sept 2024	Proposed end date:	31 st Jan 2025	
	Introduction to the Research (maximum 300 words per section) Ensure that you write for a <u>Non-Specialist Audience</u> when outlining your response to the points below: <i>Purpose of Research Activity</i> <i>Proposed Research Question</i> <i>Aims of Research Activity</i> <i>Objectives of Research Activity</i> Demonstrate, briefly, how Existing Research has informed the proposed activity and explain <i>What the research activity will add to the body of knowledge</i> <i>How it addresses an area of importance.</i>				
3	Purpose of Research Activity The primary purpose of this project is to explore if and how use of voice (through vocalisations/sound-making and singing) in 1-2-1 sessions with someone diagnosed with a degenerative condition, such as Parkinson Disease or Motor Neurone Disease, has an impact on their mental well-being and quality of life. Speech difficulties are a common symptom of such diseases, and hence the secondary purpose is to observe if there are any resulting benefits to speech and vocal communication. (this box should expand as you type)				
4	Research Question What is the impact of vocalisations/sound-making and singing on mental wellbeing and quality of life in a person with a degenerative disease? And are there any benefits to speech and vocal communication? (this box should expand as you type)				

5	Aims of Research Activity To develop an understanding of if and how use of voice in 1-2-1 sessions (through vocalisations/sound-making and singing) impacts mental well-being and quality of life in someone diagnosed with a degenerative disease, and if there are any secondary benefits to speech and vocal communication. (this box should expand as you type)
6	Objectives of Research Activity • To undertake a literature review to gain further understanding of current research. • To consult with qualified music therapists, to ascertain their learnings and approaches to use of voice with people diagnosed with a degenerative condition, that would be suitable for my practice as a community musician. • To understand impact of sessions on participant's mental well-being and quality of life. • To identify any secondary benefits to participant's speech and vocal communication. (this box should expand as you type)
	Proposed methods (maximum 600 words) Provide a brief summary of all the methods that may be used in the research activity, making it clear what specific techniques may be used. If methods other than those listed in this section are deemed appropriate later, additional ethical approval for those methods will be needed. You do not need to justify the methods here, but should instead describe how you intend to collect the data necessary for you to complete your project.
7	To conduct a qualitative case study. Questionnaire (F1) – to utilise questionnaires suitable for measuring mental well-being, such as the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS), and quality of life (QOL). To be completed before the first session, and at recommended/suitable intervals, until the last session (for comparison). Audio or Video recording (F5) – to record select words or phrases at the beginning and end of each session, to observe any audible change in speech clarity and ascertain if the participant notices any difference in themselves (for example, is it easier to pronounce a word). Participant Observation, with their knowledge (F7) – to observe the participant in sessions, from a behavioural and reactive perspective, adapting planned content as appropriate and making hand-written notes. Interview (F2) – to conduct an interview after the last session, to understand more about the participant's experience overall. (this box should expand as you type)
	Location of research activity Identify all locations where research activity will take place.
8	UK – participant's home (unless an alternative location can be facilitated). (this box should expand as you type)
	Research activity outside of the UK If research activity will take place overseas, you are responsible for ensuring that local ethical considerations are complied with and that the relevant permissions are sought. Specify any local guidelines (e.g. from local professional associations/learned societies/universities) that exist and whether these involve any ethical stipulations beyond those usual in the UK (provide details of any

	licenses or permissions required). Also specify whether there are any specific ethical issues raised by the local context in which the research activity is taking place, for example, particular cultural and/or legal sensitivities or vulnerabilities of participants. If you live in the country where you will do the research then please state this.
9	N/A <i>(this box should expand as you type)</i>

10	Use of documentation not in the public domain: Are any documents NOT publicly available?	NO	☐
		YES	☒
11	If Yes, please provide details here of how you will gain access to specific documentation that is not in the public domain and that this is in accordance with the current data protection law of the country in question and that of England and Wales. Medical records - I will ask for permission from the participant to see, or if not view, then be advised of details insofar as they relate to formal diagnosis of their condition. <i>(this box should expand as you type)</i>		

	Does your research relate to one or more of the seven aims of the Well-being of Future Generations (Wales) Act 2015?	YES	NO
12	A prosperous Wales	☐	☒
13	A resilient Wales	☐	☒
14	A healthier Wales	☐	☒
15	A more equal Wales	☐	☒
16	A Wales of cohesive communities	☐	☒
17	A Wales of vibrant culture and thriving Welsh language	☐	☒
18	A globally responsible Wales	☐	☒
19	If YES to any of the above, please give details:		
	<i>(this box should expand as you type)</i>		

SECTION F: Scope of Research Activity

	Will the research activity include:	YES	NO
1	Use of a questionnaire or similar research instrument?	☒	☐
2	Use of interviews?	☒	☐
3	Use of focus groups?	☐	☒
4	Use of participant diaries?	☐	☒
5	Use of video or audio recording?	☒	☐
6	Use of computer-generated log files?	☐	☒

7	Participant observation with their knowledge?	☒	☐
8	Participant observation without their knowledge?	☐	☒
9	Access to personal or confidential information without the participants' specific consent?	☐	☒
10	Administration of any questions, test stimuli, presentation that may be experienced as physically, mentally or emotionally harmful / offensive?	☒	☐
11	Performance of any acts which may cause embarrassment or affect self-esteem?	☒	☐
12	Investigation of participants involved in illegal activities?	☐	☒
13	Use of procedures that involve deception?	☐	☒
14	Administration of any substance, agent or placebo?	☐	☒
15	Working with live vertebrate animals?	☐	☒
16	Procedures that may have a negative impact on the environment?	☐	☒
17	Other primary data collection methods. Please indicate the type of data collection method(s) below.		
	Details of any other primary data collection method: (this box should expand as you type)	☐	☒

If NO to every question, then the research activity is (ethically) low risk and **may** be exempt from **some** of the following sections (please refer to Guidance Notes).

If YES to any question, then no research activity should be undertaken until full ethical approval has been obtained.

SECTION G: Intended Participants

If there are no participants then do not complete this section, but go directly to section H.

	Who are the intended participants:	YES	NO
1	Students or staff at the University?	☐	☒
2	Adults (over the age of 18 and competent to give consent)?	☐	☒
3	Vulnerable adults?	☒	☐
4	Children and Young People under the age of 18? (Consent from Parent, Carer or Guardian will be required)	☐	☒
5	Prisoners?	☐	☒
6	Young offenders?	☐	☒
7	Those who could be considered to have a particularly dependent relationship with the investigator or a gatekeeper?	☐	☒
8	People engaged in illegal activities?	☐	☒
9	Others. Please indicate the participants below, and specifically any group who may be unable to give consent.		
	Details of any other participant groups: (this box should expand as you type)	☐	☒

	Participant numbers and source Provide an estimate of the expected number of participants. How will you identify participants and how will they be recruited?	
10	How many participants are expected?	1 <i>(this box should expand as you type)</i>
11	Who will the participants be?	Adult with diagnosis of a degenerative disease, such as Parkinson's Disease or Motor Neurone Disease. <i>(this box should expand as you type)</i>
12	How will you identify the participants?	Already identified (known through a friend) – would contact to recruit. If they declined, I would ask if they knew of anyone who might be interested. Otherwise, I would contact a local group affiliated with an association, such as Parkinson's UK, or MND Association. <i>(this box should expand as you type)</i>

	Information for participants:	YES	NO	N/A
13	Will you describe the main research procedures to participants in advance, so that they are informed about what to expect?	☒	☐	☐
14	Will you tell participants that their participation is voluntary?	☒	☐	☐
15	Will you obtain written consent for participation?	☒	☐	☐
16	Will you explain to participants that refusal to participate in the research will not affect their treatment or education (if relevant)?	☐	☐	☒
17	If the research is observational, will you ask participants for their consent to being observed?	☒	☐	☐
18	Will you tell participants that they may withdraw from the research at any time and for any reason?	☒	☐	☐
19	With questionnaires, will you give participants the option of omitting questions they do not want to answer?	☒	☐	☐
20	Will you tell participants that their data will be treated with full confidentiality and that, if published, it will not be identifiable as theirs?	☒	☐	☐
21	Will you debrief participants at the end of their participation, in a way appropriate to the type of research undertaken?	☒	☐	☐
22	If NO to any of above questions, please give an explanation			
	<i>(this box should expand as you type)</i>			

	Information for participants:	YES	NO	N/A
24	Will participants be paid?	☐	☒	☐
25	Is specialist electrical or other equipment to be used with participants?	☒	☐	☐
26	Are there any financial or other interests to the investigator or University arising from this study?	☐	☒	☐
27	Will the research activity involve deliberately misleading participants in any way, or the partial or full concealment of the specific study aims?	☐	☒	☐
28	If YES to any question, please provide full details			
	25 – Use of mobile phone to record audio and/or video. <i>(this box should expand as you type)</i>			

SECTION H: Anticipated Risks

	Outline any anticipated risks that may adversely affect any of the participants, the researchers and/or the University, and the steps that will be taken to address them. If you have completed a full risk assessment (for example as required by a laboratory, or external research collaborator) you may append that to this form.		
1	Full risk assessment completed and appended?	Yes ☐	No ☒
2	Risks to participants For example: sector-specific health & safety, emotional distress, financial disclosure, physical harm, transfer of personal data, sensitive organisational information		
	Risk to participants: Condition specific issues, relating to their diagnosis, which may include potential seizure activity. Ability of participant to continue to provide informed consent during research period (due to worsening of condition). Health risk from infection (for example, a cold). Excessive exposure to noise (through use of instruments, recordings and voice). Poor mobility leading to slips & trips. Use of questionnaire's (ref. F10) – questions that might be deemed offensive or emotionally distressing. Use of voice in sessions potentially causing embarrassment or affecting self-esteem (ref. F11), due to speech issues experienced by participant.	<i>How you will mitigate the risk to participants:</i> Participant's wife, or suitable alternative, to be present during sessions, to support if required. I am not a first aider, and so it is critical that someone able to support the participant is present. If deterioration of condition occurs during the period of research, research/sessions to stop. Consult with participant and participant's wife (or suitable alternative) to be aware of any changes. If informed consent can no longer be given, research/sessions to stop immediately. If Principal Researcher is unwell, session to be cancelled and rescheduled. Mindful of noise levels. Participant will not be exposed to excessively loud sounds. All instruments and cables to be stored safely, whilst in and out of use, to avoid trip hazards. Advise participant prior to seeing questionnaire that if they find any question offensive or distressing, to say immediately. If so, provide support to participant – they can omit answering a particular question if they prefer, or stop and come back to it. Facilitate a safe space for participant to express themselves freely, and not feel embarrassed by what they may or may not have control over in that moment. If distress is observed, stop.	

	Personal data – audio/video, handwritten session notes and completion of questionnaires and interviews. <i>(this box should expand as you type)</i>	Audio/video recordings on a passcode protected phone, transferred to a password protected laptop after each session and backed up on a password protected USB stick that will remain at Principal Researcher's home address (deleted from phone after transfer). Paperwork - handwritten notes, questionnaires and interviews stored securely at home (until end of research, when they will be destroyed/shredded). They will also be digitised and saved on the same laptop and USB stick. <i>(this box should expand as you type)</i>
3	If research activity may include sensitive, embarrassing or upsetting topics (e.g. sexual activity, drug use) or issues likely to disclose information requiring further action (e.g. criminal activity), give details of the procedures to deal with these issues, including any support/advice (e.g. helpline numbers) to be offered to participants. Note that where applicable, consent procedures should make it clear that if something potentially or actually illegal is discovered in the course of a project, it may need to be disclosed to the proper authorities	
	N/A <i>(this box should expand as you type)</i>	
4	Risks to the investigator For example: personal health & safety, physical harm, emotional distress, risk of accusation of harm/impropriety, conflict of interest	
	Risk to the investigator: Lone working. Risk of accusation of harm/impropriety Moving/handling instruments and equipment. Health of Principle Researcher. Emotional distress & possible bias. <i>(this box should expand as you type)</i>	<i>How you will mitigate the risk to the investigator:</i> Participant's wife, or suitable alternative, to be present during sessions, to be available if needed for support, or in case of an emergency. Adhere to UWTSD's Research Ethics & Integrity Code of Practice and Sound Sense Code of Practice. Check that informed consent is still given throughout course of research. Principle Researcher has completed manual handling online training. If unwell, cancel session and reschedule. Participant identified is known to the Principal Researcher, hence mindful of managing personal reaction to their health condition and awareness of potential bias. <i>(this box should expand as you type)</i>
5	University/institutional risks For example: adverse publicity, financial loss, data protection	
	Risk to the University: Data protection.	<i>How you will mitigate the risk to the University:</i> All data referenced to ensure anonymity, securely stored on Principal Researcher's password protected laptop & USB stick. Paperwork stored securely at PR's home. To be destroyed at end of research project.

	Damage to reputation through Participant accusing Principal Researcher of causing harm/impropriety. <i>(this box should expand as you type)</i>	Adhere to UWTSD's Research Ethics & Integrity Code of Practice. Informed consent from Participant throughout is critical. <i>(this box should expand as you type)</i>
6	Environmental risks For example: accidental spillage of pollutants, damage to local ecosystems	
	Risk to the environment: N/A <i>(this box should expand as you type)</i>	How you will mitigate the risk to environment: N/A <i>(this box should expand as you type)</i>

Disclosure and Barring Service				
	If the research activity involves children or vulnerable adults, a Disclosure and Barring Service (DBS) certificate must be obtained before any contact with such participants.	YES	NO	N/A
7	Does your research require you to hold a current DBS Certificate?	☒	☐	☐
8	If YES, please give the certificate number. If the certificate number is not available please write "Pending"; in this case any ethical approval will be subject to providing the appropriate certificate number.	001781014028		

SECTION I: Feedback, Consent and Confidentiality

1	Feedback What de-briefing and feedback will be provided to participants, how will this be done and when?
	Participant and participant's wife (or suitable alternative) will have my contact details. I will do a de-brief in the final interview and offer them a copy of my final report to read. <i>(this box should expand as you type)</i>
2	Informed consent Describe the arrangements to inform potential participants, before providing consent, of what is involved in participating. Describe the arrangements for participants to provide full consent before data collection begins. If gaining consent in this way is inappropriate, explain how consent will be obtained and recorded in accordance with prevailing data protection legislation.
	Prior to gaining formal consent, I will inform the participant (and their wife or suitable alternative) of time involvement, what information I am seeking and the purpose of my research. If they agree to participate, I will send a formal consent form via email for them to sign. I will also do informal check-ins before each session. <i>(this box should expand as you type)</i>
3	Confidentiality / Anonymity Set out how anonymity of participants and confidentiality will be ensured in any outputs. If anonymity is not being offered, explain why this is the case.
	I will use a reference for the participant (not their name), on all audio/video, notes, questionnaires and interview. <i>(this box should expand as you type)</i>

SECTION J: Data Protection and Storage

	Does the research activity involve personal data (as defined by the General Data Protection Regulation 2016 "GDPR" and the Data Protection Act 2018 "DPA")?	YES	NO
1	"Personal data" means any information relating to an identified or identifiable natural person ('data subject'). An identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person. Any video or audio recordings of participants is considered to be personal data.	☒	☐
	If YES, provide a description of the data and explain why this data needs to be collected:		
2	Name and contact details (email and phone number) of participant and participant's wife. Signed consent forms, audio/video recordings made, and potentially through use of questionnaires/interview. This data needs to be collected to be able to conduct the research project outlined above. (this box should expand as you type)		
	Does it involve special category data (as defined by the GDPR)?	YES	NO
3	"Special category data" means sensitive personal data consisting of information as to the data subjects' – (a) racial or ethnic origin, (b) political opinions, (c) religious beliefs or other beliefs of a similar nature, (d) membership of a trade union (within the meaning of the Trade Union and Labour Relations (Consolidation) Act 1992), (e) physical or mental health or condition, (f) sexual life, (g) genetics, (h) biometric data (as used for ID purposes),	☒	☐
	If YES, provide a description of the special category data and explain why this data needs to be collected:		
4	Participant has been diagnosed with a degenerative condition, such as Parkinson's Disease or Motor Neurone Disease, which will therefore come under section (e) of special category data. (this box should expand as you type)		

	Will data from the research activity (collected data, drafts of the thesis, or materials for publication) be stored in any of the following ways?	YES	NO
5	Manual files (i.e. in paper form)?	☒	☐
6	University computers?	☐	☒
7	Private company computers?	☐	☒
8	Home or other personal computers?	☐	☒
9	Laptop computers/ CDs/ Portable disk-drives/ memory sticks?	☒	☐
10	"Cloud" storage or websites?	☐	☒
11	Other – specify:	☐	☒
12	For all stored data, explain the measures in place to ensure the security of the data collected, data confidentiality, including details of backup procedures, password protection, encryption, anonymisation and pseudonymisation:		

	All data will be stored on my personal password protected laptop and backed up on a password protected USB stick that will remain at Principal Researcher's home address. In addition, any paper documents, such as hand-written notes, or questionnaires/interview data, will be stored in a locked cupboard at Principal Researcher's home address. Participant will be assigned a reference, in place of their name, to ensure confidentiality. <i>(this box should expand as you type)</i>
--	--

Data Protection			
	Will the research activity involve any of the following activities:	YES	NO
13	Electronic transfer of data in any form?	☒	☐
14	Sharing of data with others at the University outside of the immediate research team?	☐	☒
15	Sharing of data with other organisations?	☐	☒
16	Export of data outside the UK or importing of data from outside the UK?	☐	☒
17	Use of personal addresses, postcodes, faxes, emails or telephone numbers?	☒	☐
18	Publication of data that might allow identification of individuals?	☐	☒
19	Use of data management system?	☐	☒
20	Data archiving?	☐	☒
21	If YES to any question, please provide full details, explaining how this will be conducted in accordance with the GDPR and Data Protection Act (2018) (and any international equivalents, where appropriate): All data will be stored on my personal password protected laptop and backed up on a password protected USB stick that will remain at Principal Researcher's home address. In addition, any paper documents, such as hand-written notes, or questionnaires/interview data, will be stored in a locked cupboard at Principal Researcher's home address. Participant will be assigned a reference, in place of their name, to ensure confidentiality. All data will be stored until completion of research project and then deleted. In accordance with DPA 2018, participant will have the right to ask to see what data is held relating to them and how it is being used. This data will be deleted immediately, if requested by the participant, in which case the data cannot and will not be used in the research project. <i>(this box should expand as you type)</i>		
22	List all who will have access to the data generated by the research activity: Only myself, as principal researcher. <i>(this box should expand as you type)</i>		
23	List who will have control of, and act as custodian(s) for, data generated by the research activity: Only myself, as principal researcher. <i>(this box should expand as you type)</i>		
24	Give details of data storage arrangements, including security measures in place to protect the data, where data will be stored, how long for, and in what form. Will data be archived – if so how and if not why not.		

	All data kept on my personal password protected laptop and backed up on password protected USB stick. Paperwork stored in locked cupboard at Principal Researcher's home address. Only I, as principal researcher, will have access. Stored until completion of research project, and then destroyed/deleted. <i>(this box should expand as you type)</i>		
25	Please indicate if your data will be stored in the UWTSD Research Data Repository (see https://researchdata.uwtsd.ac.uk/). If so please explain. <i>(Most relevant to academic staff)</i>		
	N/A <i>(this box should expand as you type)</i>		
26	Confirm that you have read the UWTSD guidance on data management (see https://www.uwtsd.ac.uk/library/research-data-management/)	YES	☒
27	Confirm that you are aware that you need to keep all data until after your research has completed or the end of your funding	YES	☒

SECTION K: Declaration

	The information which I have provided is correct and complete to the best of my knowledge. I have attempted to identify any risks and issues related to the research activity and acknowledge my obligations and the rights of the participants. In submitting this application I hereby confirm that I undertake to ensure that the above named research activity will meet the University's Research Ethics and Integrity Code of Practice which is published on the website: https://www.uwtsd.ac.uk/research/research-ethics/		
1	Signature of applicant:		Date: 17th Aug 2024

For STUDENT Submissions:

2	Director of Studies/Supervisor:	Laura James	Date: 17.10.24
3	Signature:	Laura James	

For STAFF Submissions:

4	Academic Director/ Assistant Dean:		Date:
5	Signature:		

Checklist: Please complete the checklist below to ensure that you have completed the form according to the guidelines and attached any required documentation:

☒	I have read the guidance notes supplied before completing the form.
☒	I have completed ALL RELEVANT sections of the form in full.
☒	I confirm that the research activity has received approval in principle
☐	I have attached a copy of final/interim approval from external organisation (where appropriate)
☐	I have attached a full risk assessment (where appropriate) ONLY TICK IF YOU HAVE ATTACHED A FULL RISK ASSESSMENT
☒	I understand that it is my responsibility to ensure that the above named research activity will meet the University's Research Ethics and Integrity Code of Practice.
☒	I understand that before commencing data collection all documents aimed at respondents (including information sheets, consent forms, questionnaires, interview schedules etc.) must be confirmed by the DoS/Supervisor, module tutor or Academic Director.

RESEARCH STUDENTS ONLY

Once complete, submit this form via the **MyTSD Doctoral College Portal** at (<https://mytsd.uwtsd.ac.uk>).

RESEARCH STAFF ONLY

All communications relating to this application during its processing must be in writing and emailed to pgresearch@uwtsd.ac.uk, with the title 'Ethical Approval' followed by your name.

STUDENTS ON UNDERGRADUATE OR TAUGHT MASTERS PROGRAMMES should submit this form (and receive the outcome) via systems explained to you by the supervisor/module leader.



JOANNE WARREN

 [Print this page](#)

Contact details

Email address

jowarrenfreelance@gmail.com

[Change](#)

Correspondence address

8 FOSSE WAY

EALING

LONDON

United Kingdom

W13 0BZ

[Change](#)

Mobile phone number

07974409362

[Change](#)

Applications and Certificates

Application	Certificate	Certificate issue date	Level of check	Application status	Update status	Remove?
E0754930481	001781014028	14/05/2022	Enhanced	Printed	Blank, no new information	☐

[Add a new Application or Certificate](#)

[View who has carried out a Status check on your Certificates](#)

Remove selected

Subscription

Status	Expiry Date
Subscribed	13/05/2025

Cancel subscription

Appendix F

Risk Assessment



Jo Warren

jowarrenfreelance@gmail.com

RISK ASSESSMENT – 5TH NOVEMBER 2024

Participant made aware that Principal Researcher holds an enhanced DBS (Disclosure and Barring Service) within Information Sheet. Certificate # 001781014028.

Risks to participant

Risk Identified	How Will Mitigate Risk
Condition specific issues relating to diagnoses (Parkinson's Disease & Motor Neurone Disease).	Participant's wife available, if needed, but does not need to be present in the sessions.
Ability of participant to continue to provide informed consent during research period (due to worsening of condition).	Consult with participant and participant's wife, if required. If informed consent can no longer be given, research/sessions to stop immediately.
Health risk from infection (for example, a cold).	Session to be cancelled, and rescheduled (if possible) if I, as Principal Researcher, am not well.
Excessive exposure to noise/sound (using instruments, playing audio recordings and voice).	Mindful of noise/sound levels. Participant will not be exposed to excessively loud sounds. Consult with participant during sessions.
Hazards relating to instruments/cables set-up and storage.	Participant in motorised wheelchair, hence no slip/trip hazard through poor mobility. However, to enable participant to maneuver freely, awareness of space required when setting up, and instruments and cables stored safely whilst in and out of use.

Questions that might be deemed offensive or emotionally distressing.	Advise participant that they can omit answering any questions they feel uncomfortable with.
Use of voice in sessions potentially causing embarrassment or affecting self-esteem, due to speech issues experienced by participant.	Facilitate a safe space for participant to express themselves freely and not feel embarrassed by what they may or may not have control over in that moment. If distress observed, stop.
Personal data – audio recordings, handwritten notes from session observation and participant answering questions.	Audio recordings on a passcode protected phone, to be transferred to a password protected laptop after each session (and deleted from phone after transfer). Paperwork – handwritten notes from observations and participants answers to questions typed up after sessions using Microsoft Word, saved on the same laptop. Audio recordings and paperwork to be retained securely, as outlined above, until research report has been marked and formally assessed by UWTSD, at which point all data will be destroyed/shredded.

Risks to Principal Researcher

Risk Identified	How Will Mitigate Risk
Lone working.	Participant's wife will not be present during sessions, but is available, if needed, for support or in case of emergency.
Risk of accusation of harm/impropriety.	Adhere to UWTSD's Research Ethics & Integrity Code of Practice and Sound Sense Code of Practice. Sound Sense is the UK professional association for community musicians.

	Check-in with participant at each session, to ensure informed consent is still given.
Moving/handling instruments and equipment.	Principal Researcher has completed 'manual handling' online training, hence aware of how to lift/move equipment safely. Keyboard and stand to be carried separately. All other equipment to be transported in box on wheels, with extendable handle.
Health of Principal Researcher.	If unwell, cancel session and reschedule (if possible). Likewise, if Participant unwell.
Emotional distress and possible bias.	Participant is known to Principal Researcher, hence mindful of managing personal reaction to changing health condition, and awareness of potential bias.

Risks to University

Risk Identified	How Will Mitigate Risk
Data protection	All data referenced to ensure anonymity and securely stored on Principal Researcher's password protected laptop. Paperwork stored securely at Principal Researcher's home. All data will be destroyed/shredded after research report has been marked and formally assessed by UWTSD.
Damage to reputation through Participant accusing Principal Researcher of causing harm or impropriety.	Adhere to UWTSD's Research Ethics & Integrity Code of Practice and Sound Sense Code of Practice. Ensure informed consent from Participant.

Appendix G

Session Questions, Answers & Notes – Analysis



Jo Warren

jowarrenfreelance@gmail.com

QUESTIONS – Session 1

Pre sessions

1. When were you diagnosed with Parkinson's Disease? When were you diagnosed with Motor Neurone Disease? (month/year)

9.5 years ago (PD). 8.5 years ago (MND) – can't remember type of MND. Said could look it up for me if needed. I replied it wasn't compulsory/only if they felt comfortable with sharing that info.

2. How would you describe your well-being generally and quality of life?

"Not very good at the minute".

Should have asked why? - in the moment must have been conscious of not wanting to cause upset by asking further.

3. How do you feel about your speech/vocal communication?

"It's poor, frustrating". "My voice is better than iPad though". "Difficult to be part of a conversation, as already moved on".

- Indicates wider-loss, socially, through speech difficulties.

4. What are your preferred communication methods?

"Speaking still (as much as possible)"

- Speech is very important & keen to communicate this way, instead of alternatives (as didn't mention any others).

5. What makes you happy?

Grandchildren (7) and Great Grandchild (1)

- Family

6. What activities or hobbies do you enjoy?

Still like music. Listens to it a lot. Tries to play guitar, struggles.
Car journeys (with wife driving, as unable to drive now)

- Music & hand/bag out of the house.

Immediately pre 1st session

1. How are you feeling right now – both physically and emotionally?

- Tiredness

"Bit tired. Physically, generally feel okay. Emotionally, feel a bit down."

Mental wellbeing perhaps lower than normal or awareness of research aims? To aid elevation of mood later?

2. What have you been doing earlier today?

Light TV content.
Humor.

Watching TV – 'Neighbours'.

We laughed at it being back on/some of the characters from years ago still being in it.

3. Is there anything else you would like to share?

"Not that I can think of".

Immediately after 1st session

1. Have you noticed any change in how you are feeling? If so, please describe.

- Tiredness ended.

"Feel happier. Still a bit tired. Physically okay".

Mental wellbeing elevated. Bina, session or company, i.e. group activity?

2. Have you noticed any difference in your speech/vocal communication? If so, can you describe what is or feels different?

Listened to recordings - slightly clearer & quicker.

"I think I said those 5 words clearer".

3. What are your plans between now and our next session? Is there anything you are particularly looking forward to?

Might be able to play guitar with me at next session.

Did not use guitar in sessions.

"Not that I can think of".

- Possible indication of minimal social activity?

4. Is there anything else you would like to share?

"Can't think of anything".

Notes

During session asked about artists/music/songs liked – mentioned Rolling Stones, particularly 'Brown Sugar'. Said we'd do next time.

Knew all the songs in the session. Mentioned he likes The Beatles. A memory was triggered by 'Show Me the Way to Go Home' – it was the song sung on a coach trip, heading back.

In chat afterwards, mentioned that wife encourages him to go out (he worries about his speech/joining in with conversations).

During post-session questions I reiterated that the sessions are all about gaining their perspective - being honest about how they feel (and not saying what they think I might be hoping for)! For example, if they didn't feel any different from pre to post session, then it is not a problem at all to say that. I will not take it personally.

I got the impression that this might be one of the only times during the week where he is doing something other than seeing family, watching TV or listening to music, going for a drive, or attending appointments. Minimal social activity?

Music
- triggering memories

- Speech/communication difficulties leading to avoiding social situations

- Touching on potential bias.

- Ties in with speech difficulties.



Jo Warren

jowarrenfreelance@gmail.com

QUESTIONS – Session 2

Immediately pre

1. How have you been this past week?

"Okay".

- Limiting question = limiting answer.

2. How are you feeling right now – both physically and emotionally?

"Okay. Slightly tired. Would say I'm an 8 or 9 out of 10".

- Tiredness

- Participant introduced
- x/10 measure.

3. Have you played guitar since our last session? If so, how was it?

Yes, had a little go, on the electric guitar. Wasn't very good though.
Listened to lots of music recently.

- Guitar important.

- Listens to music.

4. Any music you've listened to recently that you'd recommend?

1
Here Q4.

Judah Kelly (was on Australian 'The Voice') – 'Count on Me'

Likes Chris Isaacs, Phil Collins, The Corrs, Simon & Garfunkel, Jude Cole

Uses Apple Music.

5. Is there anything else you would like to share?

Participant's son came round on Sunday. He showed me their 'Christmas Book' (his son is a guitar teacher, and designed/produced the book for teaching).

Proud - of son's
- achievement & dedication to his
in book

Immediately post

1. Have you noticed any change in how you are feeling? If so, please describe.

- Less tired.
"Yes – happier, and not so tired. 10 out of 10!"

- Elevated mood.

2. Have you noticed any difference in your speech/vocal communication? If so, can you describe what is or feels different?

"Felt it was slightly clearer on test at the end".

*Listened to recording.
- Agree it was slightly clearer.*

3. Asked if found it easier to sing than speak (or if no difference noticed)?

"Brown Sugar was difficult to sing. Otherwise, found easy to sing other songs".

(Brown Sugar was the song requested by participant at prior session).

Did not refer to speech in answer, and I, in noting response, did not follow up – made a note to ask again at a subsequent session.

4. Asked how found using percussion and singing at the same time?

"I found using the tambourine quite difficult. Easier to concentrate on both towards the end of session".

*Use of percussion
- a distraction?
Switching focus
away from voice?*

5. Is there anything else you'd like to share?

"I enjoyed it. Always nice to see you". Otherwise, nothing else to share.

*- Social aspect of
session activity*

Notes

I wonder if carefully instructed use of percussion with voice could be incorporated in next session (rather than participant playing freely).

Said if they would like to play guitar during a future session, to just have it ready to go!

The switching of hand holding/tapping tambourine during session was prompted by me recalling melodic intonation therapy in a prior module (ie. using left hand to tap, participant is right-handed).

Focus on songs that are easier to sing in sessions (perhaps listening to requested songs that are not as easy to sing – either with or without the recording).

*- Attempting slower
version to make
accessible (if
tempo fast).*



Jo Warren

jowarrenfreelance@gmail.com

QUESTIONS – Session 3

Immediately pre

1. How have you been this past week/what have you been up to?

“Okay. Was out this morning with a mate”. He’d just got back from holiday. We’ve been friends for 20 years.

- Sharing a little more of a friend.
Friendship.

2. How are you feeling right now – both physically and emotionally?

“Okay. About an 8/10. Physically a little tired, been up since 3am”.

- Tiredness

3. Have you played guitar since our last session? If so, how was it?

“Yes, I have – three times, I think”. Practiced ‘Brown Sugar’ on electric guitar.

- Plays guitar regularly

4. How much time do you spend listening to music per week?

“6-8 hours per week, and when I can’t sleep, I put something on then”.

- Music listening helps to ease?

5. Is there anything else you would like to share?

“I can’t think of anything else, no” (we both laughed).

- Humour

Immediately post

1. Have you noticed any change in how you are feeling? If so, please describe.

“I’m feeling happier. 9 or 9.5 / 10”.

- Elevated mood.

2. Have you noticed any difference in your speech/vocal communication? If so, can you describe what is or feels different?

"I noticed I said the test words easier at the end".

3. Is there anything else you'd like to share?

"Nothing else to add".

4. As you know, I can't use your real name in the report but would like to use a name instead of referring to 'participant' throughout the report. Do you have a preference/any suggestions on the name I could use?

Chose the name 'Mark'

Listened to recording.
Definitely clearer & noticed ease he accesses/pronounces certain words.
Particularly 'sky'.

- Giving a 'voice' is
- selecting name to be used in report.

Notes

Participant stated it was difficult to concentrate on both singing and playing a percussive instrument last session. Use of additional instrumentation could influence responses negatively, particularly if struggling, also focus of research is on use of voice, hence decided not to incorporate percussion during this session.

'You Can't Hurry Love' – too quick to sing with recording. Did a slower version with just keys and voice. Shows importance of finding a way to access songs which might initially seem out of reach/not accessible. Similar approach with 'A Sky Full of Stars'. Asked if there was another Phil Collins song participant would like to do next time.

- Accessibility re.
Songs used.

Felt connection throughout the session, particularly after 'What A Wonderful World' – was a lovely song to sing together.

- Connection/bond.
through singing together.



Jo Warren

jowarrenfreelance@gmail.com

QUESTIONS – Session 4

Immediately pre

1. How have you been this past week/what have you been up to?

"Been okay generally. Been to hospital. A friend was round yesterday. Went out for a meal at lunch time".

- Med out/social

Friendship

2. How are you feeling right now – both physically and emotionally?

"6/10 – bit weary/little bit drained. 4/10 emotionally".

Mental wellbeing

- Low.

3. Have you played guitar since our last session? If so, how was it?

"Once this last week. Was okay". Tried playing Teenage Kicks by the Undertones.

Less guitar
- this week

4. Have you sung since our last session? If so, how much time did you spend singing?

"No. Should I?" (we laughed)

- Honour.

5. How important is music to you? Has your connection with and use of music changed since your diagnoses, and if so, how?

"Quite important". Connections have changed over time and taste in music has changed too. "Find it more therapeutic now". Listen to music a lot more now than used to. Also listen to music when can't sleep".

Music - importance
- therapeutic.

6. Is there anything else you would like to share?

"No"

Immediately post

1. Have you noticed any change in how you are feeling? If so, please describe.

"Feel a little bit better. Still 6/10 physically. Now 7 or 8 / 10 emotionally".

- Elevated mood.

2. Have you noticed any difference in your speech/vocal communication? If so, can you describe what is or feels different?

"Slightly better, but not as improved as in previous sessions".

- listened to recordings.
Agree, not much diff (compared to prior sessions).
Did emotions impact?

3. Is there anything else you'd like to share?

He was surprised by how emotional he was to 'Father to Son'. Particularly as he listens to it quite a lot and usually okay. Last listened to it on Friday AM. There was no specific memory triggered, just a feeling.

! Emotional connection to songs.

Nothing more to share.

Additional Question

If there was an opportunity to join a local group for music/singing sessions, would you be interested? Or would you prefer 1-2-1?

"No, I'd prefer 1-2-1".

- Self-conscious of speech in social setting?

Notes

During this session there was an overwhelming sense of emotion from singing 'Father to Son'. Participant apologised for being upset - I said there was no need to be sorry at all and not to feel embarrassed. Music and/or singing can catch us in that way unexpectedly! I felt privileged to share this moment with him.



Jo Warren

jowarrenfreelance@gmail.com

QUESTIONS – Session 5

Immediately pre

1. How have you been this past week/what have you been up to?

- Social.
"Pretty okay. Had Christmas lunch out, with partners. Put Christmas tree up a couple of days ago (Sunday)".

2. How are you feeling right now – both physically and emotionally?

"Okay – 8/10 (both physical and emotionally)".

- Good mood at start.

3. Have you played guitar since our last session? If so, how was it?

"Yes – 2 or 3 times". "Okay".

- More guitar than prior week

4. Have you sung since our last session? If so, how much time did you spend singing?

Tried singing whilst playing guitar. Prefers playing guitar to singing.

- Not singing outside of sessions.

5. You mentioned that you'd prefer 1-2-1 sessions (and not to attend a local group) at our last session – why is that?

"Because my singing is so bad". That's the only reason. Would prefer 1-2-1 but would consider a local group if I was running it and could get there (music/singing for fun).

*' Self-conscious of singing voice.
1-2-1 (open to group)
Access is important.*

6. Is there anything else you would like to share?

"No, not that I can think of".

Immediately post

1. Have you noticed any change in how you are feeling? If so, please describe.

"Feel a bit happier – 9/10 physically, 10/10 emotionally".

- Slightly elevated mood.

2. Have you noticed any difference in your speech/vocal communication? If so, can you describe what is or feels different?

Listened to recordings.
- Slightly clearer, & took less time to say 'Jingle Bells'.

"Not much but did find it easier to say 'Jingle Bells'. Been struggling with speech a bit more than normal recently".

3. Is there anything else you'd like to share?

Looking forward to Christmas. Going to daughter's-in-law for Christmas day. Looking forward to spending time with family, grand-daughter, grandson etc. Daughter-in-law trained with a well-known chef (couldn't remember the name) that has a place/restaurant in Marlow.

- Christmas/family an important time.

Notes

It was lovely to transition to Christmas songs during session – however, participant over-sang mid-way through, and it was the first time, since starting sessions, that we had to stop/have a break for voice rest. Only continued when participant was ready – doing some breathing and gentle vocal glides to warm-up again.



Jo Warren

jowarrenfreelance@gmail.com

QUESTIONS – Session 6

Immediately pre

1. How have you been this past week/what have you been up to?

- Friends & family

"Okay. Saw mate Carl this AM. Yesterday we met a friend at the garden centre for coffee, which was nice". Grand-daughter and great grandson round on Sunday – great grandson slept on his lap, which was "really nice".

2. How are you feeling right now – both physically and emotionally?

- Really good mood at start

"7/10 – both physically and emotionally".

3. Have you played guitar or sung since our last session? If so, how was it?

Played guitar twice (including earlier that day). Didn't sing. Prefers to sing with someone, rather than on own ("to mask my terrible voice", laughs).

- Honour
- Self-conscious of voice

"Used to play and sing, but not singing now – struggle with both at the same time, and doesn't sound good".

- Struggle with singing & playing guitar at same time.

4. Is there anything else you would like to share?

Self-conscious/anxious.

"No, thing else to share".

Immediately post

1. Have you noticed any change in how you are feeling? If so, please describe.

"Yes – feeling very happy. 9/10 physically, 10/10 emotionally".

- Elevated mood.

2. Have you noticed any difference in your speech/vocal communication? If so, can you describe what is or feels different?

"Not really, no - feel a bit more tired".

- Listened to recording. Shuffled over slightly diff words than pre-session, but still intelligible

3. Is there anything else you'd like to share?

"Thoroughly enjoyed the time/session".

- Engagement/Connection through music/singing together.

Final Interview/Debrief

Well-being/QoL – "Not very good at the minute" (first session)

Enjoys – Being with family (very important), seeing friends, listening to music, playing guitar, car journeys and watching Neighbours!

Speech/Vocal Communication – "It's poor, frustrating". "My voice is better than iPad though".

"Difficult to be part of a conversation, as already moved on" (first session).

1. How would you describe your well-being generally and quality of life? What changes, if any, have you noticed over the last six weeks?

"Better than it was, because of approaching Christmas and having fun". Can't think of anything re. any specific changes.

- Christmas and having fun = improved well-being & QoL

2. Do you feel any differently about your speech/vocal communication? If so, how?

Feels the same as described in first session.

3. Do you find it easier to sing or speak? From a retrieval/pronunciation of words perspective (rather than perceived quality of sound).

"Singing, I think". "Easier to speak when putting on an accent, like Scottish". Then proceeded to demonstrate!

- Easier to retrieve/pronounce words when singing?
- Putting on accent (finds easier to speak)

4. How have you found our sessions these last six weeks?

"I've enjoyed them all"

- Enjoyment / social
connection through
music / singing with me?

5. Now that our sessions have come to an end, what do you think you will do with this time instead?

- Guitar in place
of sessions.

"I suppose I'll try and play the guitar instead". "Frustrating as hands aren't what they used to be and I'm finding it difficult to strum now". We talked about alternative ways to access/play guitar, maybe experimenting with pedals and sounds, without need to strum strings. Suggested his son might have ideas (being a guitar teacher).

Frustrations.

6. Is there anything else you'd like to share?

"No, not that I can think of".

Notes

Might be interested in coming along to a local group I run (if possible), for music/singing, although preference would be 1-2-1.

As I was leaving, participant's wife commented on how much he has enjoyed the sessions.

Independent observation
re enjoyment of sessions.

Appendix H

Data Analysis - Themes

Data Analysis - Themes

Key

Initial Q/Session 1
Session 2
Session 3
Session 4
Session 5
Session 6/Final Q

THEME 1 - CONNECTION

WELLBEING / QOL: SOCIAL / ENTERTAINMENT

(FAMILY / FRIENDS / MUSIC / EMOTIONAL CONNECTION / LIGHT ENTERTAINMENT (TV) / HUMOUR)

Initial Q / Pre Sessions	Post Sessions / Final Q / General Thoughts and Notes
"Not very good at the minute". <i>Should have asked why? In the moment must have been conscious of not wanting to cause upset by asking further.</i>	"Better than it was, because of approaching Christmas and having fun". Can't think of anything re. any specific changes. Christmas and having fun = improved well-being and QoL.
Grandchildren (7) and Great Grandchild (1) Family.	
Watching TV – 'Neighbours'. We laughed at it being back on/some of the characters from years ago still being in it. Light TV content. Humour.	
"Bit tired. Physically, generally feel okay. Emotionally, feel a bit down." Tiredness. Mental wellbeing - perhaps lower than normal, or awareness of research aims? To aid elevation of mood later?	"Feel happier. Still a bit tired. Physically okay". Tiredness eased. Mental wellbeing elevated. Bias, session or company, ie. group activity?
	Knew all the songs in the session. Mentioned he likes The Beatles. A memory was triggered by 'Show Me The Way To Go Home' – it was the song sung on a coach trip heading back. Music triggering memories.
	During post-session questions I reiterated that the sessions are all about gaining their perspective - being honest about how they feel (and not saying what they think I might be hoping for)! For example, if they didn't feel any different from pre to post session, then it's not a problem at all to say that. I won't take it personally. Touching on potential bias.
"Okay. Slightly tired. Would say I'm an 8 or 9 out of 10". Tiredness. Participant introduced x/10 measure.	"Yes – happier, and not so tired. 10 out of 10!" Elevated mood. Less tired.
Participant's son came round on Sunday. He showed me his 'Christmas Book' (his son is a guitar teacher, and designed/produced the book for teaching). Proud - of son's achievement & dedication to him in his book.	
	"I enjoyed it. Always nice to see you". Otherwise, nothing else to share. Social aspect of session activity.
"Okay. About an 8/10. Physically a little tired, been up since 3am". Tiredness.	"I'm feeling happier. 9 or 9.5 / 10". Elevated mood.
"Okay. Was out this morning with a mate". He'd just got back from holiday. We've been friends for 20 years. Sharing a little more information. Friendship.	
"I can't think of anything else, no" (we both laughed). Humour.	
	Felt connection throughout the session, particularly after 'What A Wonderful World' – was a lovely song to sing together. Connection/bond through singing together.
"6/10 – bit weary/little bit drained. 4/10 emotionally". Mental wellbeing low.	"Feel a little bit better. Still 6/10 physically. Now 7 or 8 / 10 emotionally". Elevated mood.
"Been okay generally. Been to hospital. A friend was round yesterday. Went out for a meal at lunch time". Friendship. Meal out/social.	
"No. Should I?" (we laughed) - Question re. singing since last session. Humour.	
	'Scarborough Fair' – Prompted a memory. Hasn't sung for years. Was in a band in his teens (only ever been in that one band). Also played guitar at church. Music triggering memories (taken from Session Plan note).
	He was surprised by how emotional he was to 'Father to Son'. Particularly as he listens to it quite a lot and usually okay. Last listened to it on Friday AM. There was no specific memory triggered, just a feeling. Emotional connection to songs.
"Okay – 8/10 (both physical and emotionally)". Good mood at start.	"Feel a bit happier – 9/10 physically, 10/10 emotionally". Slightly elevated mood.
"Pretty okay. Had Christmas lunch out, with partners. Put Christmas tree up a couple of days ago (Sunday)". Social.	
	Looking forward to Christmas. Going to daughter's-in-law for Christmas day. Looking forward to spending time with family, grand-daughter, grandson etc. Daughter-in-law trained with a well-known chef (couldn't remember the name) that has a place/restaurant in Marlow. Christmas/family - an important time.
"7/10 – both physically and emotionally". Fairly good mood at start.	"Yes – feeling very happy. 9/10 physically, 10/10 emotionally". Elevated mood.
"Okay. Saw mate Carl this AM. Yesterday we met a friend at the garden centre for coffee, which was nice". Grand-daughter and great grandson round on Sunday – great grandson slept on his lap, which was "really nice". Friends and family.	
Played guitar twice (including earlier that day). Didn't sing. Prefers to sing with someone, rather than on own ("to mask my terrible voice", laughs). Humour. Self-conscious of voice.	
	"Better than it was, because of approaching Christmas and having fun". Can't think of anything re. any specific changes. Christmas and having fun = improved well-being and QoL.
	"I've enjoyed them all" Enjoyment/social connection through music/singing with me?
	"Thoroughly enjoyed the time/session". Enjoyment/connection through music/singing together.
	As I was leaving, participant's wife commented on how much he has enjoyed the sessions. Independent observation re. enjoyment of sessions.

Data Analysis - Themes

Key

Initial Q/Session 1
Session 2
Session 3
Session 4
Session 5
Session 6/Final Q

THEME 1 (SUB-THEME): DISCONNECTION (SPEECH/COMMUNICATION - FRUSTRATION / SOCIAL IMPACT / GIVING A VOICE)

Initial Q / Pre Sessions	Post Sessions / Final Q / General Thoughts and Notes
"It's poor. Frustrating". "My voice is better than iPad though". "Difficult to be part of a conversation, as already moved on". Indicates wider-loss, socially, through speech difficulties.	
"Speaking still (as much as possible)" Speech is very important and keen to communicate this way, instead of alternatives (as did not mention any others).	
	"I think I said those 5 words clearer". Listened to recordings - slightly clearer & quicker.
	In chat afterwards, mentioned that wife encourages him to go out (he worries about his speech/joining in with conversations). Speech/communication difficulties leading to avoiding social situations.
	I also got the impression that this might be one of the only times during the week where he is doing something other than seeing family, watching TV, going for a drive, or attending appointments. Minimal social activity? Ties in with speech difficulties.
	"Felt it was slightly clearer on test at the end". Listened to recordings. Agree it was slightly clearer.
	"I noticed I said the test words easier at the end". Listened to recordings. Definitely clearer & noticed ease to access/pronounce certain words - particularly 'sky'.
	Chose the name 'Mark'. Giving a 'voice' in selecting name to be used in the report.
	"Slightly better, but not as improved as in previous sessions". Listened to recordings. Agree, not much difference (compared to prior sessions). Did emotions impact?
	"No, I'd prefer 1-2-1". Self-conscious of speech in social setting?
"Because my singing is so bad". That's the only reason. Would prefer 1-2-1 but would consider a local group if I was running it and could get there (music/singing for fun). Self-conscious of singing voice. 1-2-1 (but open to group). Access is important.	
	"Not much but did find it easier to say 'Jingle Bells'. Been struggling with speech a bit more than normal recently". Listened to recordings. Slightly clearer & took less time to say 'Jingle Bells'.
Played guitar twice (including earlier that day). Didn't sing. Prefers to sing with someone, rather than on own ("to mask my terrible voice", laughs). Humour. Self-conscious of voice.	
"Used to play and sing, but not singing now – struggle with both at the same time, and doesn't sound good". Struggle with singing & playing guitar at same time. Self-conscious/awareness.	
	"Not really, no - feel a bit more tired". Listened to recordings. Stumbled over slightly different words than pre-session, but still intelligible.
	Feel the same as described in first session. First session - Speech/Vocal Communication – It's poor/frustrating, but better than using iPad. Want to speak as much as possible. Difficult being part of a conversation
	"Singing, I think". "Easier to speak when putting on an accent, like Scottish". Then proceeded to demonstrate! Easier to retrieve/pronounce words when singing? Putting on accent (finds easier to speak).

Data Analysis - Themes

Key

Initial Q/Session 1	
Session 2	
Session 3	
Session 4	
Session 5	
Session 6/Final Q	

THEME 2: ACCESSIBILITY (LOCATION / SONGS / POTENTIAL LOCAL MUSIC & SINGING GROUP)

Initial Q / Pre Sessions	Post Sessions / Final Q / General Thoughts and Notes
	Focus on songs that are easier to sing in sessions (perhaps listening to requested songs that are not as easy to sing – either with or without the recording). Attempting slower version to make accessible (if tempo fast).
	'You Can't Hurry Love' – too quick to sing with recording. Did a slower version with just keys and voice. Shows importance of finding a way to access songs which might initially seem out of reach/not accessible. Similar approach with 'A Sky Full of Stars'. Asked if there was another Phil Collins song participant would like to do next time. Accessibility re. songs used.
"Because my singing is so bad". That's the only reason. Would prefer 1-2-1 but would consider a local group if I was running it and could get there (music/singing for fun). Self-conscious of singing voice. 1-2-1 (but open to group). Access is important.	

Data Analysis - Themes

Key

Initial Q/Session 1

Session 2

Session 3

Session 4

Session 5

Session 6/Final Q

THEME 3: MUSIC (GUITAR / LISTENING / THERAPEUTIC)

Initial Q / Pre Sessions	Post Sessions / Final Q / General Thoughts and Notes
Still like music. Listens to it a lot. Tries to play guitar, struggles. Car journeys (with wife driving, as unable to drive now). Music & Travel/being out of the house.	
"Yes, had a little go, on the electric guitar. Wasn't very good though". Guitar important.	
Listened to lots of music recently. Listens to music - hence question re. recommendations.	
	"I found using the tambourine quite difficult. Easier to concentrate on both towards the end of session". Use of percussion a distraction? Switching focus away from voice?
"Yes, I have – three times, I think". Practiced 'Brown Sugar' on electric guitar. Plays guitar regularly.	
"6-8 hours per week, and when I can't sleep, I put something on then". Music listening - helps to ease?	
"Once this last week. Was okay". Tried playing Teenage Kicks by the Undertones. Less guitar this week.	
"Quite important". Connections have changed over time and taste in music has changed too. "Find it more therapeutic now". Listen to music a lot more now than used to. Also listen to music when can't sleep". Music - importance / therapeutic.	
"Yes – 2 or 3 times". "Okay". More guitar than prior week.	
Tried singing whilst playing guitar. Prefers playing guitar to singing. Not singing outside of sessions.	
Played guitar twice (including earlier that day). Didn't sing. Prefers to sing with someone, rather than on own ("to mask my terrible voice", laughs). Humour. Self-conscious of voice.	
"Used to play and sing, but not singing now – struggle with both at the same time, and doesn't sound good". Struggle with singing & playing guitar at same time. Self-conscious/awareness.	
	"I suppose I'll try and play the guitar instead". "Frustrating as hands aren't what they used to be and I'm finding it difficult to strum now". We talked about alternative ways to access/play guitar, maybe experimenting with pedals and sounds, without need to strum strings. Suggested his son might have ideas (being a guitar teacher). Guitar in place of sessions/frustrations. Accessibility.