

Extended Work-Based Learning Project

Acceptance and Commitment Coaching (ACC) for singers who are recovering from a vocal disorder: case study research to trial ACC aiming to increase singers psychological flexibility and reduce Music Performance Anxiety Symptoms

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Presentation Schedule

- Research aims
- Why trial ACC in vocal rehabilitation sessions?
- What is ACC?
- Theories and Concepts
- Methods
- Findings
- Conclusions

Research aims

- To assess whether singers who have experienced a vocal disorder also develop Music Performance Anxiety (MPA) with standardised assessment protocols and explore the relationship between voice disorders and MPA
- To conduct a pilot project to use the ACC model to see if it is a feasible strategy to help singers understand psychological issues related to their vocal disorder within the context of vocal rehabilitation sessions.
- To provide singers who have experienced a vocal disorder self-help tools to use after vocal rehabilitation has completed to manage negative thoughts and feelings or old maladaptive behaviours related to singing

Why trial ACC in vocal rehabilitation?

Context and justification

- Psychological provision isn't easily available for all singers with vocal disorders.
- Professionals involved in the care of voice disordered patients should learn more psychotherapeutic skills (Aldridge-Waddon et al., 2023)
- Trait and state anxiety, neuroticism and depression are prevalent in the vocally disordered population and ACT increases 'psychological flexibility' and 'self-efficacy' to address negative thoughts and feelings (Aldridge-Waddon et al, 2023)

Contextual Behaviourism

Is your mind telling you the truth?

- 'Relational Frame theory' - verbal events are behavioural operants (S-R-S) which become out of date (psychological inflexibility) so individuals over identify with the 'storied self' (Hayes, Barnes-Holmes & Roche., 2001).
- How true personal preconceptions, feelings, thoughts and sensations are always questioned when practising Hexaflex skills

Muscle Tension Dysphonia

MRI Studies

- MRI studies of singers with pMTD run faulty somatosensory programming in the brain which possibly perpetuates MTD symptoms where prediction errors are not updated
- Effective strategies when rehabilitating the voice are needed that 're-boot' the brain to update altered motor schemas.
- pMTD is linked more to a 'disordered somatosensory system' rather than a disordered motor system

(Kryshtopava et al, 2017; Arbeiter et al., 2018; Ziethe et al., 2019, McDowel et al., 2022)

Acceptance and Commitment Coaching

Acceptance Commitment Therapy (ACT) is a self-help approach with strong empirical evidence in clinical and non-clinical contexts to reduce 'psychological inflexibility'. This means to develop the ability to respond flexibly to negative thoughts, feelings, sensations and situations rather than in a fixed way, aligning actions with personal values and goals (Hayes et al., 2006).

Non-clinical one-to-one coaching is considered to be effective, improves performance and well being, helps individuals cope with mental health problems, decreases stress and increases goal achievement and perceived control (Lloyd et al, 2013)

ACC is an effective approach for injured athletes to develop psychological skills to cope with anxiety and support them through the painful process of adhering to rehabilitation exercise protocols

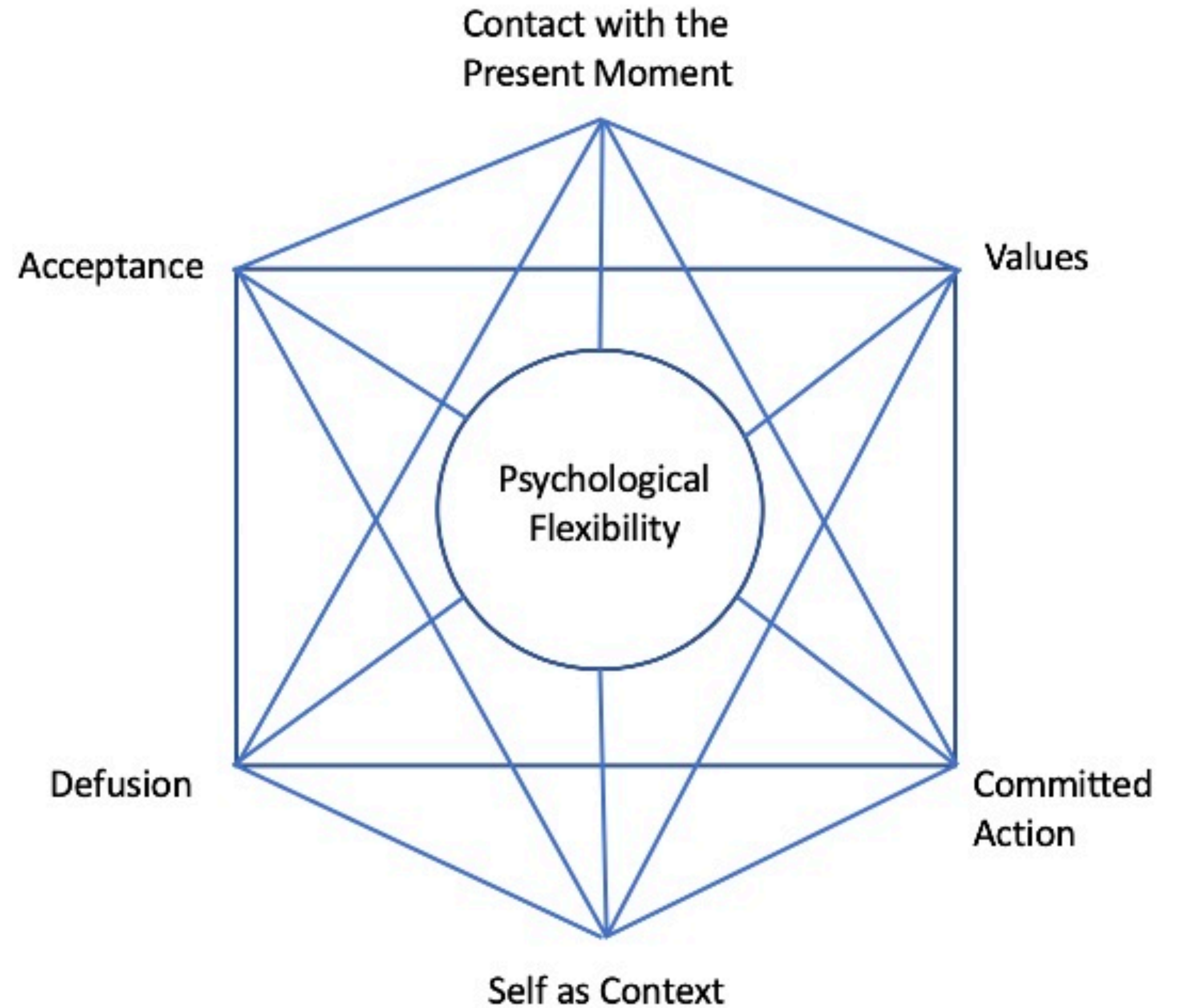
(Mahoney & Hanrahan, 2011)

ACC provides a theoretically robust framework and allows the Coach freedom and creative licence when collaborating with the Coachee, facilitating learning through active experience towards goals based upon the Coachee's values.

(Hill & Oliver, 2019)

Hexaflex

Openness
Awareness
Engagement



Changing maladaptive behaviours

Using Hexaflex skills to change perfectionist behaviours

- The study demonstrated clinically significant improvements of clinical perfectionism using ACT processes where participants high standards remained but were not rigidly adhered to as they were previously (Stoeber & Otto, 2006)

ACT & ACC FOR MUSICIANS

MPA and Performance enhancement

Research so far supports the efficacy of ACC as a viable approach in the voice studio with vocally healthy singers who suffer from Music Performance Anxiety (MPA) where singing teachers and a psychologist report significant reduction of MPA symptoms and improved performance ratings

(Juncos et al., 2017; Juncos & Markman, 2015; Mahony, Juncos & Winter, 2022).

Rehabilitation

Dealing with pain

- Acceptance of pain is a significantly more effective strategy in coping with pain (Vowels, et al., 2007)
- Individuals suffering from pMTD can experience pain in the upper back (trapezius muscle), the jaw and a feeling of lump in the throat (Jamsen et al, 2015).
- ACC is an effective approach to teach injured athletes psychological skills to cope with their anxiety and help them through the painful process of adhering to rehabilitation exercise protocols (Gardner & Moore, 2004, Mahoney & Hanrahan, 2011).

MPA and Voice Disorders

- Performing in front of an audience can trigger ‘unconscious desires, wishes and conflicts’ where the performer regards the audience as a significant person remembered in childhood, albeit “real or imagined” (Kenny et al. 2014, Kenny et al, 2016).
- Individuals with FVD’s commonly have insecure attachment profiles which interact with challenging social situations resulting in reduced trust of others and fear of rejection (Baker, 2016)
- People with voice disorders demonstrate ‘high stress reactivity’ and increased ‘extrinsic laryngeal muscle activity” (Demmink-Geertman and Dejonckere, 2008).
- MPA symptoms include “shortness of breath”, muscles contract ready for fight or flight “especially in the neck and shoulders” and a “sense of fatigue” due to muscle tension (Driskell, 2012)

CONTEXT

- ‘Conflict over speaking out’ (COSO) describes individuals suppression of speaking due to anticipation of a negative reaction particularly in relationships where they have an emotional investment (Andrews & House, 1988).
- COSO was observed in a non-randomised case control study exploring ‘Life Events and Difficulties’ (LEDS) of people diagnosed with FVD and OVD, 12 months prior to diagnosis and then repeated with individuals with MTVD and PVD (Baker et al, 2013)
- Musicians may only experience performance anxiety in the context of music making or they may also suffer from other anxiety disorders particularly social phobia (Ackermann et al., 2014).

Research Methodology

Acceptance and Commitment Training

- **Contextual Behaviourism:** actions are inextricably linked to a 'context' of the present and past (Biglan & Hayes 1996)
- **Pragmatism:** Exploring practical solutions and learn by 'action' towards reframing and changing maladaptive behaviours (John Dewey)
- **Hermeneutic phenomenology:** Reflective interpretations of an individual's lived history of interactions with the environment and present moment experiences (Lincoln & Guber, 1985)

Mixed Methods Case Study Design

Participants:

Singer 1: Age: 60's. Classical singer and teacher. Sang professionally for many years before contracting pneumonia. Diagnosed with Bronchiectasis. Recently diagnosed with MTD predominantly in the singing voice. Vocal quality was breathy and constricted in the low and mid range. The upper range was non-existent above D5 due to MTD

Singer 3: Age: 20's. Student about to start her final year of a performance degree in musical theatre. She had surgery due to a Vocal fold bridge on her right vocal fold 11 months prior to the start of the study resulting in vocal fold scarring. Her singing and speaking voice sounded moderately breathy, strained and hoarse . Upper range above B5 aphonic.

Singer 4: Age: 40's. Folk singer. Diagnosis: MTD. Has had vocal rehabilitation prior to this study due to problems managing breath when singing after abdominal surgery. She gigs at weekends and sings in a choir. Reduced upper range.

Singer 5: Age: 30's. Singer, Actor and Teacher was diagnosed with vocal nodules 15 years prior to this study. Continues to have vocal issues and upper range reduced although the nodules had resolved many years ago.

ACC in Vocal Rehabilitation Sessions

Based on Hill & Oliver's (2019) basic ACC course structure

	Vocal and ACC session structure
Session 1	Vocal warm-up. Sing baseline song. Introduction to principles of ACT, analysing concerns and coping strategies linked to voice and performance. Initial meditative exercise practising focused attention. Homework practice.
Session 2	Vocal warm-up. Diffusion and acceptance exercise. Homework practice.
Session 3	Present moment' practice and vocal work. Homework practice
Session 4	Identification of personal values linked to voice and performance, vocal work. Homework practice.
Session 5	Develop personal strategies to address MPA, vocal work. Homework practice
Session 6	Vocal warm-up. 'Present moment' practice. Perform a song. Feedback and discussion.

Data Collection

Quantitative data

- Singing voice handicap index-10 (SVHI-10) (Cohen et al 2009)
- Musician's Acceptance & Action Questionnaire (MAAQ) (Juncos et al, 2023)
- Philadelphia Mindfulness Scale (PHLMS) (Cardaciotto et al, 2008)
- Believability of Anxious Feelings and Thoughts (BAFT) (Herzberg et al., 2012)

SVHI-10, MAAQ, PHILMS, and BAFT - completed at the start, mid-point and end point

- Social Comparison Scale (SCS) (Allan & Gilbert, 1995)- *completed twice at the start and end point*
- Experiential Shame Scale (ESS) (Turner, 2014) - *completed after performing*

Qualitative data

- Conversations were recorded in all vocal rehabilitation sessions and then transcribed.
- A final questionnaire was emailed to the singers with the same 6 questions at the end of the study.

Ethics and Insider Research

Ethical considerations and to avoid work-based insider research bias:

- Maintain a professional relationship with my clients
- Avoid procedural bias by giving singers time to reflect and respond to questions and record vocal sessions
- Write a reflective journal noting any researcher presuppositions as they occur
- Regular Supervision with Psychologist to discuss interpretation of data
- Participants will sign a consent form before the beginning the research which will outline in detail what is involved
- Participants are aware that their anonymity will be adhered to at all times
- Participants can withdraw from the research knowing all data will be destroyed
- Participants will be able to see the data at the end of the research period

Quantitative Data Results - Reliable Change Index

Questionnaire scores and graphs

Reliable change index = > 1.96 or < -1.96	BAFT M= 50.1 SD = 7.6 Sdiff=7.552	MAAQ M = 30.6 SD = 7.6 Sdiff=4.02	PHILMS Acceptance M = 30.2 SD = 8.0 Sdiff=3.504	PHILMS Awareness M = 34.7 SD = 6.8 Sdiff=3.486	SCS M=64.67 SD=11.65 sdiff=4.94	ESS M=3.9 SD=.73 Sdiff = 0.546	SVHI-10 M = 9.13 SD = 5.15 SDIFF = 1.78
SINGER 1	62-53-45 RCI = 2.5	21-29-23 RCI = 1.1	25-29-28 RCI = 0.86	35-35-34 RCI = -0.31	59-64 RCI = 1.01	4.9-4.3 RCI=-1.1	37-31-31 RCI= -3.37
SINGER 3	73-65-52 RCI = 2.8	20-36-30 RCI=2.48	17-24-23 RCI = 1.71	34-39-36 RCI = 1.43	57- 0	4.8-0	26-19-20 RCI = - 3.37
SINGER 4	37-50-50 RCI - no	25-37-35 RCI=1.3	31-35-26 RCI = 1.43	43-39-39 RCI = -1.14	64-54 RCI=2.2	2.8-4.1 RCI=2.38	28-14-8 RCI = - 11.23
SINGER 5	61-71-45 RCI = 2.1	31-31-31 RCI = 0	26-23-32 RCI = 1.71	40-39-36 RCI = -1.14	57-67 RCI=2.02	4.1-3.5 RCI=1.09	14-9-13 RCI = -2.8

Qualitative Data - Thematic Analysis

Themes and Categories:

1. Negative thoughts, emotions and maladaptive behaviours

- Reduced perceived control of symptoms
- Emotional disconnect
- Vocal technique and perfectionism
- Performance context and MPA
- Experiencing physical pain and discomfort

2. ACC intervention

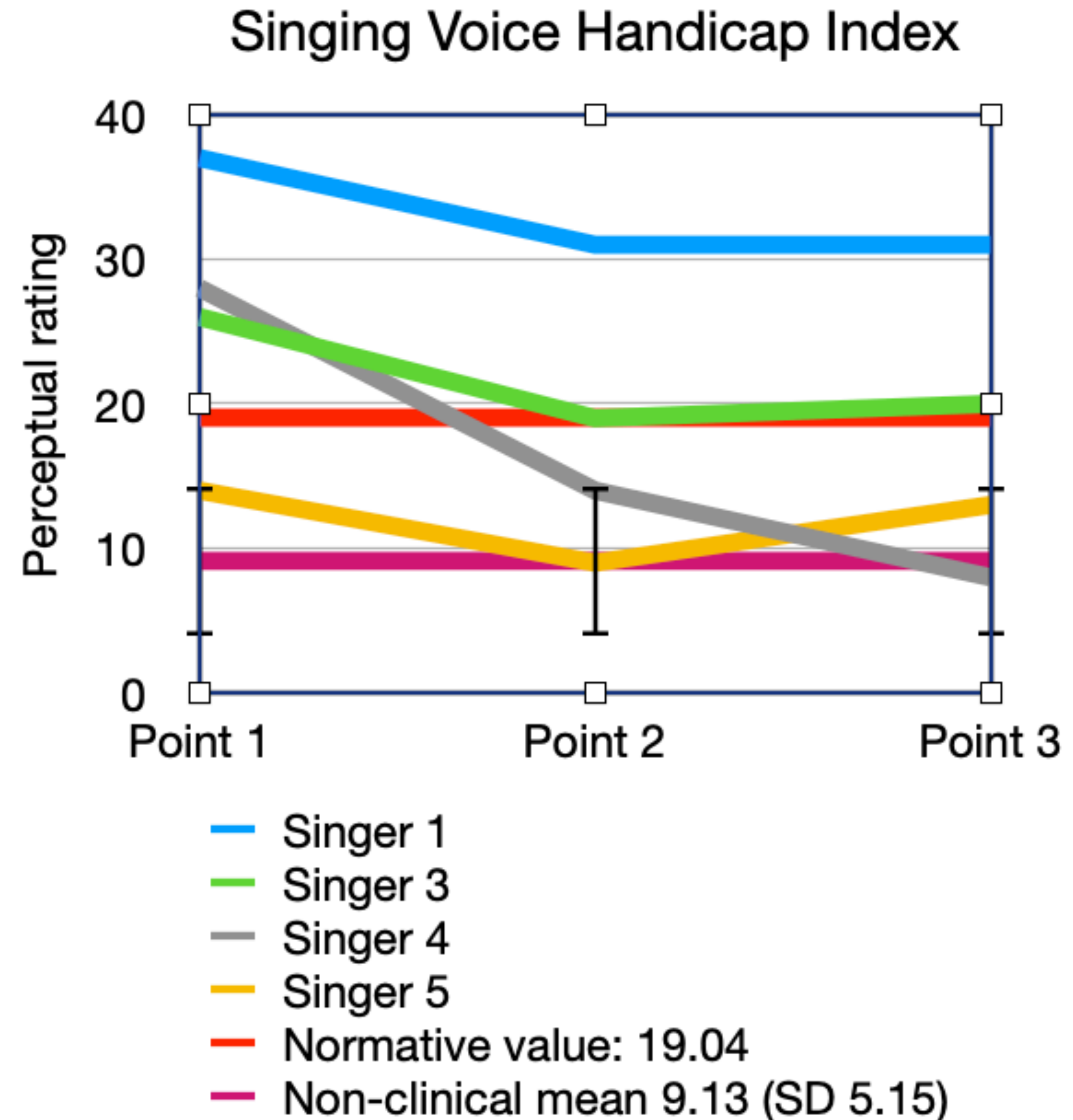
- Coping strategies
- ACC skills

3. Integrating ACC into VR sessions

- Session structure and content
- Coach/Coachee collaboration

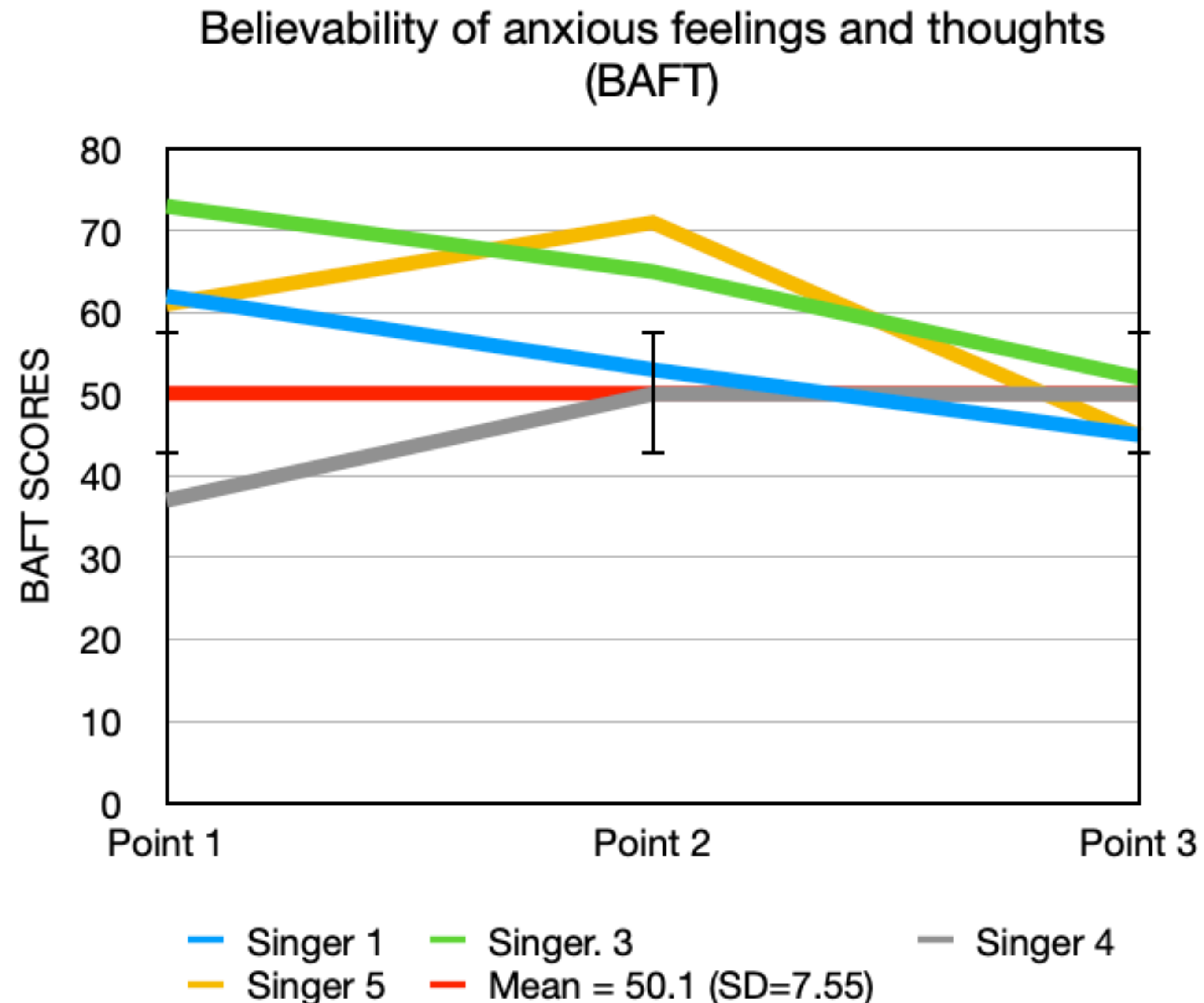
Perceived control of symptoms

- Singers will judge their singing voice more severely (Renk et al, 2017)
- Vocal symptoms and emotional responses increase when perceived control reduces (Misono et al, 2018)
- S1: *Instantly I have stopped breathing and I am completely rigid...abdomen...jaw... forcing it through*
- S3: *very tight in my shoulders..behind my ears...chest...throat*
- S5: *“there’s something odd doing something*
- S4: *I was really pleased... thinking about my tongue...my gig went well*



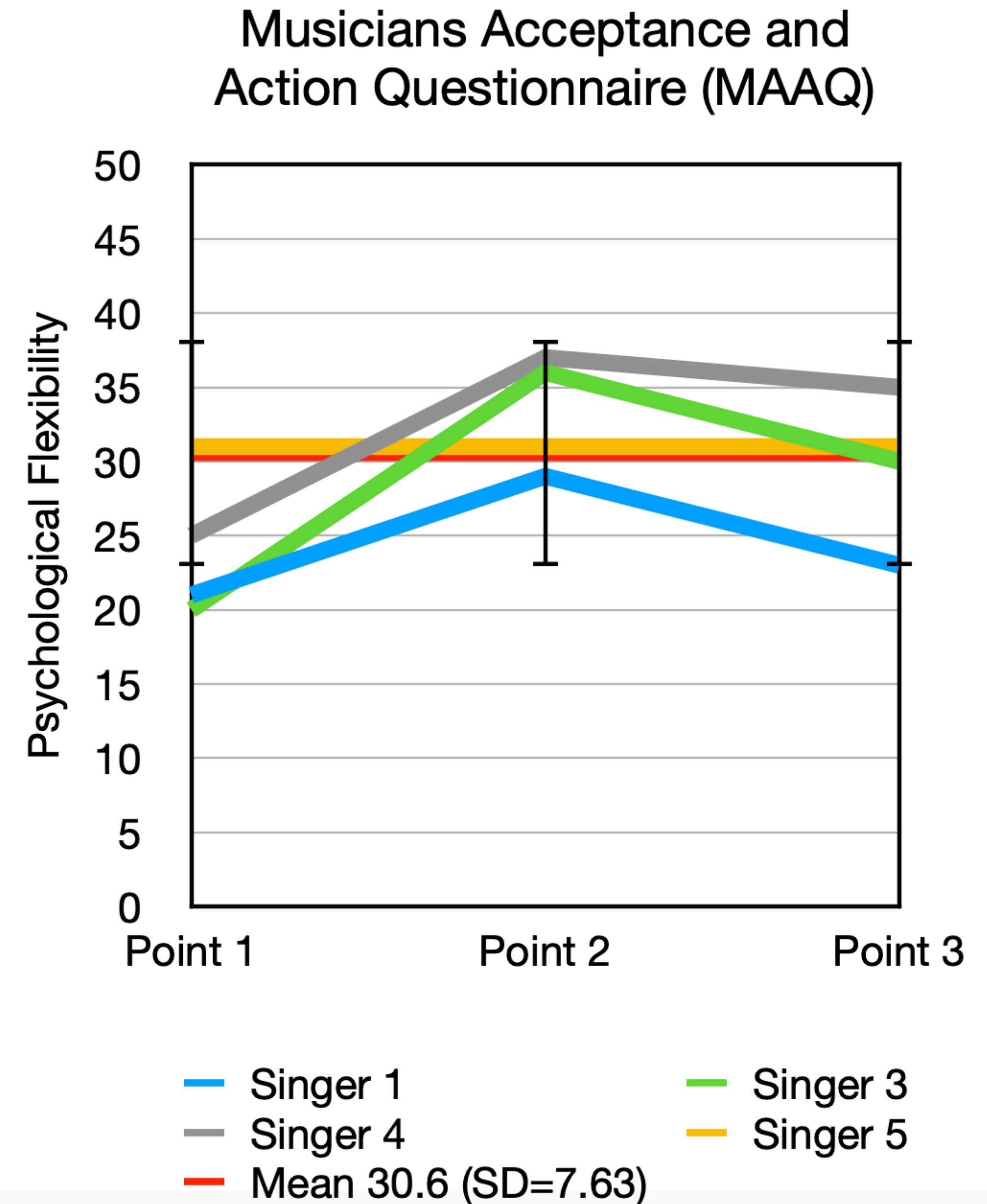
Emotional disconnect

- Not being in touch with emotions is common amongst females with FVD's (O'hara et al., 2011)
- S1: *I don't feel the emotional attachment to anything*
- S1: *It's disgust, utter disgust that I can't sing an E. It's shocking, it makes me feel quite upset....tearful and that's a revelation...the brain has strategies, if we don't sing that note we won't have that feeling.*
- Consciously processing painful thoughts theoretically will help modulate "the visceral expression of emotion" (Baker & Lane, 2009)
- S1: *allowing thoughts to appear without engaging with any negativity surrounding them...it helps to be in the moment rather than experiencing anxiety about what was to come*



Vocal technique and perfectionism

- 'Interoceptive accuracy' is counterproductive is counterproductive, anxiety will increase, 'vocal congruency will decrease' (Crow et al., 2019)
- S5: *it's an ongoing battle from breaking away from old habits constantly plagued with this right? Is this right?*
- S1: *My larynx is getting paralysed... paralysis analysis*
- S1 and S5 excessive concern in sessions and performance to achieve very high standards suggests maladaptive perfectionism (Ens et al, 2001). This is a common behaviour for females with FVD (Baker et al, 2013).



Performance context and MPA

- S1, S3 and S4's SVHI-10 and MAAQ total scores correlated negatively suggesting perceived reduction of vocal issues and increased psychological flexibility.
- S3 and S4 made reliable clinical improvements in psychological flexibility.
- S5 MAAQ scores remained consistently on or just below the mean which was surprising.
- *After rehearsals feeling so 'xxxx' think you are probably going to be kicked out...I see other people make mistakes and just not torture themselves*
- *Both her ESS and SCS scores plummeted below the non-clinical mean*
- Negative social comparisons and shame have been found by cognitive therapists and other performers as a symptoms of performance anxiety
(Driskell, 2012; Mahoney, Juncos & Winter, 2022)

COSO and MPA

CONFLICT OVER SINGING OUT

- 'COSO' (Andrews & House, 1988, Baker et al., 2013)
- *S1: The feeling that somebody somewhere will be criticising that so if I sing a high note and am louder than anybody else - part of my brain says nobody wants to hear you, don't sing so loudly*
- *S1: When I wa little there was an expectation not to show off...a female just didn't voice things....don't shout and cry.... This internal dialogue is going to go on for the rest of my life - I am going to be judged - I know somebody is not going to like me*

Acceptance and Commitment Coaching

Changing maladaptive coping strategies

- **Avoidance:**

S1: It has felt it is such a different voice....it's uncomfortable physically and mentally and practising, I ask myself do you really want to be in that space even just for 10 minutes?

When an individual hears their dysphonia, an error signal is triggered to change muscular activation and sensory information to update and correct so theoretically faulty neural signals are sent to the brain stem to increase laryngeal muscular tension (Kryshtopava et al., 2017)

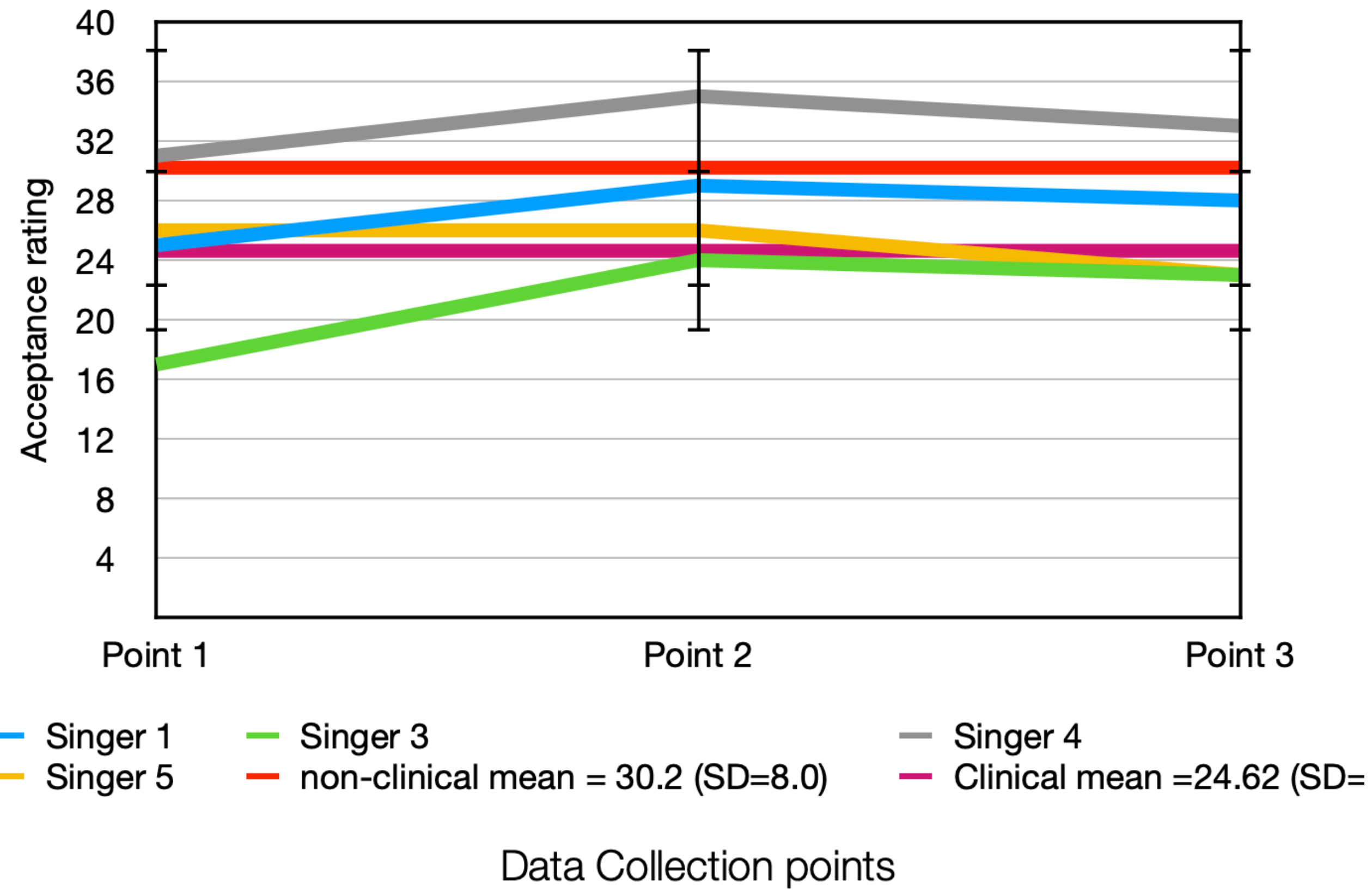
Diffusion: *S1: I'm turning off all the verbal insertions going on in my mind*

Focused attention: *S1: My brain is focusing entirely on the sensation rather than a critical or analytical thought*

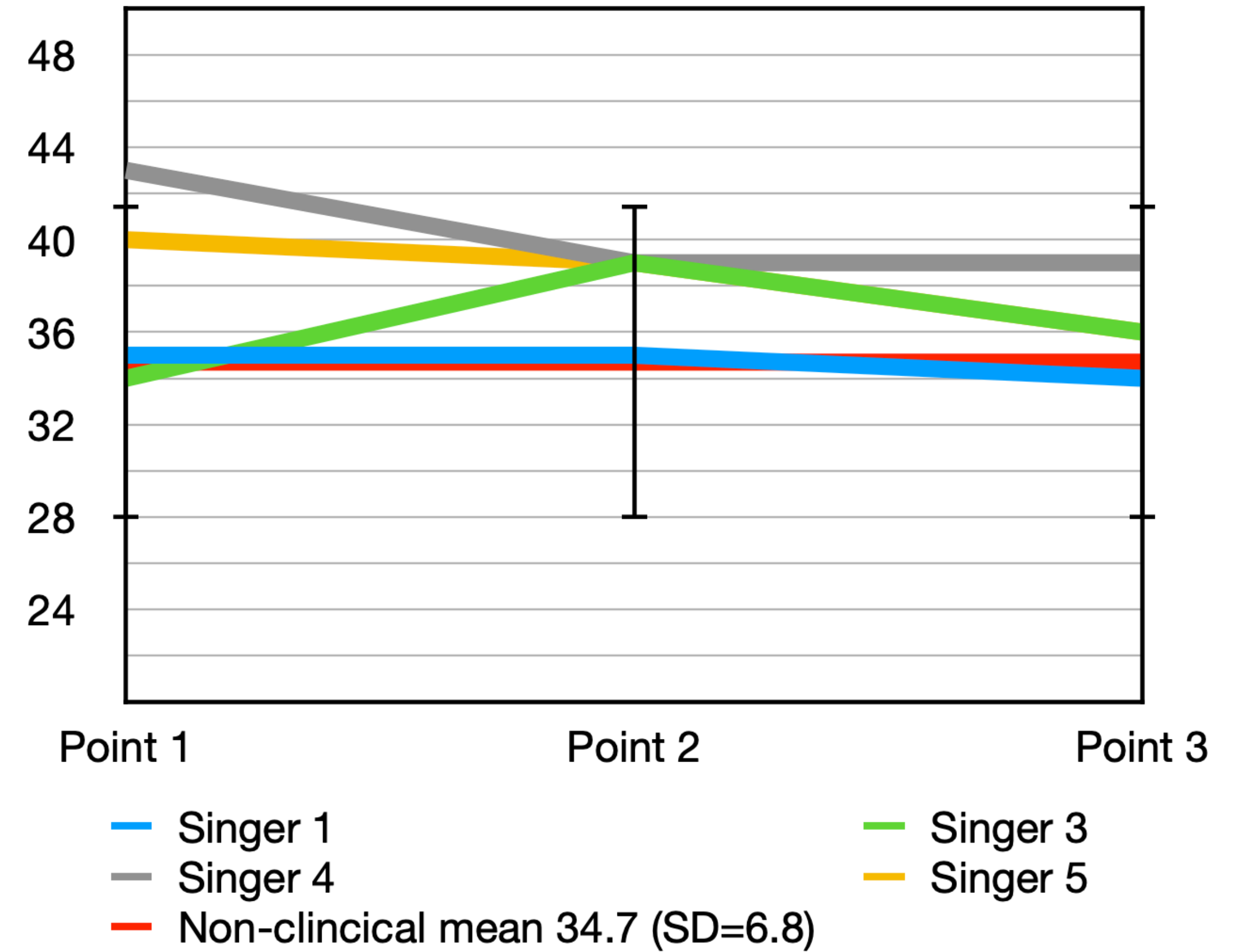
Values: *S1: There are moments now when I have enjoyed singing...before, all rehearsals were a trial and an expectation that it wasn't going to feel good*

'Successful working' would only be considered true if the goal was motivated by an identified value which had been stated prior to the action (Hayes, Wilson et al., 2013)

PHILMS SUB-SCALE ACCEPTANCE



PHILMS SUB-SCALE AWARENESS



ACC skills

Openness, Awareness and Engagement

- S5: *that old nodular way of singing*
- S4: *I found diffusion and separation were the most poignant and analysing what affects it... my values are an authentic and expressive voice - enjoying practising - good beats control*
- S3: *I get very over whelmed ...I'm struggling..... My voice can be absolutely fine on that day but mentally I am worrying before it even happened. Then when I notice that and accept it, then sometimes I can get up and sing rather than just sitting down and watching it*
- S1: *I am now the board and just noticing these negative thoughts but not reacting to them as I did*
- S5: *I think only recently now I really finally believe that I don't have any nodules left*

Integrating ACC into VR sessions

Session structure and content

- Increasing patients self-efficacy is to ensure the patient has a 'mastery experience' early on in voice rehabilitation so they will be motivated to continue treatment (Boniha & Dawson, 2011)
- *You were not just fitting me into a programme but rather tailoring the programme to my situation with your suggestions as to how to apply it*
- *"My busy schedule was difficult"*
- *"If you asked me now, I would do it in a group setting because I understand more and on the journey of accepting"*
- *"No I would not have felt comfortable sharing what is to me a very personal journey"*
- *"I think discussing and sharing experiences with others in similar situations would've been so helpful"*

Performance Exposure

Experiential shame

- S4 was the only singer whose two performance variables were controlled and her ESS and SCS scores illustrated reliable clinical change. Identifying the value of being creative when practice reduced her avoidance of practising to so she felt more prepared.
- An opera singers performance anxiety improved after gradual performance exposure in smaller venues with a supportive audience before returning to larger venues (Goffi-Fynn & Carrol, 2012)



Coach/Coachee collaboration

- *I'd like to say that you said right at the beginning that 'I am not a counsellor' and that is why it has been working because you are a singer and a singing teacher and understand the nature of being a singer*

A teacher/singer 'rapport' is crucial to build the singers confidence through the rehabilitation process (Goffi-Finn and Carroll, 2012)

- *You are not like somebody completely abstract and cut out of the whole process. It's like you made it a two way thing, you talking about what you went through was useful to me, helped me to trust you*

ACC is an 'experiential model' so the focus is on trying out different exercises, giving feedback or reflecting on experiences and giving 'judicious instruction' as appropriate (Hill & Oliver, 2019, p. 118-119)

Limitations and future directions

Limitations:

- Due to the small sample size these results cannot be generalised. There is a risk of bias due to researcher interpretation and there was no follow up data collection to see if change was sustained and psychological flexibility continued to improve.

Future directions:

- Continue to use the BAFT, MAAQ and SVHI - 10 to monitor psychological flexibility and perceived control in vocal rehabilitation
- Trial an ACC in a group setting initially preparing singers in initial one-to-one sessions and offer an option to join a group if the singer has mild MPA symptoms or if severe, advise them to seek professional psychological help
- Include controlled performance exposure so that reliable clinical change can be measured.
- Investigate further the relationship between MPA and pMTD with a larger sample using MAAQ and SVHI and BAFT assessments.
- Explore pain management in MTD using Hexaflex strategies

Conclusions

The aim of this study was to see if ACC was an appropriate coaching model that would help singers to understand more clearly their vocal problems from a psychological perspective and have tools to change maladaptive behaviours, emotions and thoughts that may be inhibiting vocal production.

All singers vocal range improved and as their psychological flexibility increased, there was a reliable clinical improvement in their ability to separate from their anxious thoughts and feelings as shown in the BAFT questionnaire. There was also a reliable clinical change in all singers perceptions of their singing voice issues indicated in the SVHI-10 scores.

By using ACC in vocal rehabilitation session, the participants reported a more dynamic and less hierarchical Coach/Coachee relationship and all were keen to continue to develop Hexaflex skills going forward.

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