CRAFTING AN EVIDENCE- BASED PODCAST ADDRESSING THE REAL VOCAL CONCERNS OF AMATEUR FEMALE SYMPHONIC CHORAL SINGERS

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INTRODUCTION

- This research project considers the female amateur symphonic choral singer aged 50 years and above
- A continuation of previous desk-based Literature Reviews undertaken in Modules 4 and 5 (Stansfield, J, 2023,2024) examining the effects of perimenopause/menopause on the ageing female singer and the impact of ageing on the amateur symphonic choral singer.
- These studies identified a number of physiological and psychological changes that can affect vocal performance in ageing female singers, including thinning of the vocal folds, reduced elasticity, and diminished respiratory capacity, resulting in decreased vocal range, tone, and stamina ((Decoster et al., 2000; Hammond et al., 2000; Ramig et al., 1983; Sataloff, 2017; Sliwinska-Kowalska et al., 2022; Weill Cornell Medicine, 2023)
- Many amateur singers are unaware of these age-related changes and the impact that they may have on their vocal capabilities (Titze, 2006), implying that the delivery of education and general awareness surrounding this subject matter was unsatisfactory.
- Highlighted a gap in the market for a practical resource such as a podcast to increase knowledge and present academic findings on vocal ageing

A SMALL SELECTION OFCURRENT PODCASTS

- The Visceral Voice (n.d.) The Visceral Voice Podcast. Available at: https://www.thevisceralvoice.com/podcast (Accessed: 24 February 2025).
- Day, V. (n.d.) Living A Vocal Life. Available at: https://open.spotify.com/show/2URvTiaahyvBylr9PUtHhB (Accessed: 24 February 2025).
- Vocal Freedom (n.d.) Vocal Freedom Podcast. Available at: https://vocalfreedom.podbean.com/ (Accessed: 24 February 2025).
- Voillequé, M. (2023) The voice and ageing. Available at: https://www.mvmusik.com/cant-wait-to-hear-you-episode-31 (Accessed: 24 February 2025).
- BackTable ENT (2023) Ageing voice: The science & the art. Available at: https://www.backtable.com/shows/ent/podcasts/211/aging-voice-the-science-the-art (Accessed: 24 February 2025).
- Streicher, L. (2023) Hormones and the voice. Dr. Streicher's Inside Information: The Menopause Podcast. Available at: https://podcasts.apple.com/us/podcast/hormones-and-the-voice/id1615785832?i=1000627799252 (Accessed: 24 February 2025).
- Brunssen, K. (2023) The evolving singing voice: Changes across the lifespan. Available at: https://www.youtube.com/watch?v=CQEdATYqLKk (Accessed: 24 February 2025).
- Bozeman, J.H. (2023) Menopause and singing through change. Available at: https://www.youtube.com/watch?v=CQEdATYqLKk (Accessed: 24 February 2025).

RATIONALE OF THE STUDY

- As an amateur choral singer and trained classical musician involved in two prestigious symphonic choral organisations for over thirty years, I know that singers are expected to perform consistently at a high level of musicianship and vocal ability under the baton of world-class conductors. The expectation to maintain vocal excellence is not only an artistic demand but also a financial imperative for choral organisations, ensuring ticket sales for large concert venues, positive critical reception, and financial viability (Smith et al., 2019)
- I have witnessed and personally experienced the physiological and psychological challenges that arise from age-related vocal changes, as well as the lack of tailored resources available to symphonic choral singers. Including decreased vocal range, challenges with increased vibrato in the voice, changes in tone and timbre to the voice, problems with breath support, particularly in challenging repertoire, and increased tension due to muscular and postural changes.
- This gap in education, knowledge/awareness and resources may delay early intervention and appropriate vocal care, leading to unnecessary vocal decline and, ultimately, challenges in maintaining choral membership (Bos et al., 2022; Schneider et al., 2017).
- Furthermore, the rigorous demands of the symphonic choral schedule may heighten susceptibility to vocal health issues and potential damage affecting longevity in the chorus (Hunter et al., 2019; Lortie et al., 2017; Svec et al., 2020).
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INCREASING LIFE EXPECTANCY

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- Current UK figures taken from the Office for National Statistics (2018) state that there are nearly 12 million (11,989,322) people aged 65 and above in the UK, of which:
- 5.4 million people are aged 75+,
- 1.6 million are aged 85+,
- Over 500,000 people are 90+ (579,776)
- 14,430 are centenarians (Office for National Statistics, 2018)
- These numbers are reflected in the symphonic chorus in which I sing, where the number of current members over 50 years old far surpasses the number of members under the age of 50 years.
- Of the **124 current singers** across both male and female voice parts, **95 are over 50 years old, r**epresenting approximately 76% of the overall membership.
- Of the **81 female vocalists, 62 are over the age of 50 years**, again representing approximately 76% of the membership
- Work by Titze (2001) states that singers who have a clear understanding of vocal anatomy and the physiological changes that may occur throughout life are better equipped to deal with their vocal situation, reiterating the importance of education and awareness in vocal health and vocal maintenance.

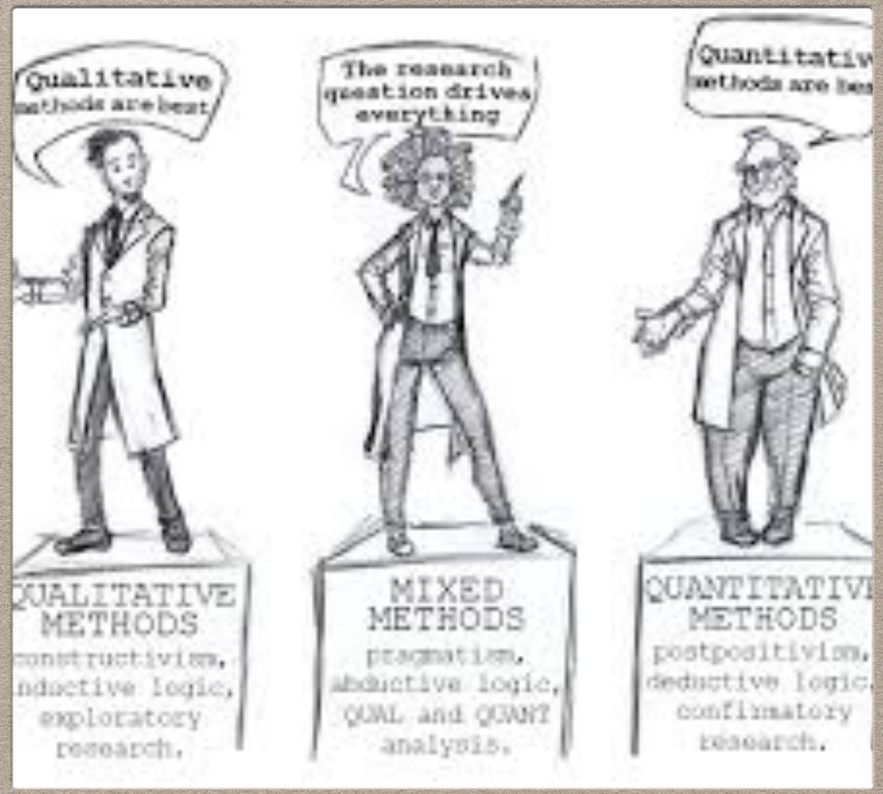
IMPORTANCE OF ADDRESSING VOCAL CONCERNS IN AGEING AMATEUR FEMALE SYMPHONIC CHORAL SINGERS

- Given the perceived lack of awareness and educational support available to amateur symphonic choral singers, alongside the negative impact of ageing on vocal function and the importance of sustaining vocal health to meet the artistic and technical standards of symphonic choruses, and an increasing ageing population which will be refelcted in choirs, this study seeks to explore the podcast as an educational medium for this niche demographic. The research will investigate how podcasts can be leveraged to convey evidence-based interventional practices, expert advice, personal narratives, and practical exercises that support optimum vocal health. By integrating personal stories and lived experiences alongside scientific research and best practices, the podcast aims to provide a multifaceted approach to vocal health education

• Research Methodology

- **Mixed-methods approach:** conducted within the context of a **pragmatic paradigm,** which allowed for flexibility in combining qualitative and quantitative methods to address real-world issues (Creswell et al., 2018; Morgan, 2014). also acknowledging **constructivist and interpretivist ontologies,** recognising that singers' views on vocal health and performance are shaped by both social contexts and individual interpretations (Creswell et al., 2018). It endeavoured to explore both personal and collective meanings that ageing female singers associate with vocal changes and their continued participation in choral activities (Pervin, 2022).
- **The Literature Review** will serve a dual purpose to highlight the areas of vocal change in ageing female singers, addressing both physiological and psychological issues that can impact vocal quality, performance and social dynamics within an ensemble setting (Hancock, 2015), and to understand the suitability of the podcast in presenting these academic findings
- **Literature Review - Part 1 -** The Ageing Voice - Followed a thematic approach, identifying recurring themes associated with the impact of age-related change on the female singing voice (Braun et al., 2006). Mainly deductive approach.
- **Literature Review—Part 2**—The Podcast—Since I had not previously studied the podcast as a medium for disseminating knowledge, the second part of the Literature Review also employed a thematic framework. However, it took more of an inductive rather than a deductive approach.
- **Questionnaire** (30 distributed, 25 returned, 83.3% response rate) - Explore the implications of ageing on the amateur female symphonic choral singer., Assess vocal health, perceptions of ageing, and challenges that singers encounter in continuing to sing. Identify key trends while also capturing individual experiences related to vocal ageing.
- **2 focus groups** for qualitative insights - thematic coding analysis.
- **Semi-structured interview with a** vocal coach - thematic coding.
- **Questionnaire** with Chorus Master
- **Data triangulation** to ensure reliability and increase credibility

- Peer-reviewed articles, books, and dissertations that examine the physiological and psychological impact of ageing on female singers, with a particular focus on amateur female symphonic choral singers.
- Primary emphasis will be on literature published from 2000 onwards (D'haeseleer, 2012; Hamdan, 2017; Moseley, 2020) while also recognising key foundational works that have significantly shaped the discourse on vocal ageing (Smith et al., 2012; David, 2008).
- A purposeful sampling approach will identify information-rich sources (Creswell et al., 2011)
- Citation mining to expand the literature base and provide a comprehensive understanding of the topic. Additionally, citation analysis tools such as Google Scholar Metrics and Scopus Citation Tracker will be used to assess the impact and relevance of selected sources.
- Literature exclusively examining male singers, non-choral singers, or topics unrelated to ageing will be excluded where appropriate.



ETHICAL CONSIDERATIONS, INSIDER RESEARCH AND BIAS

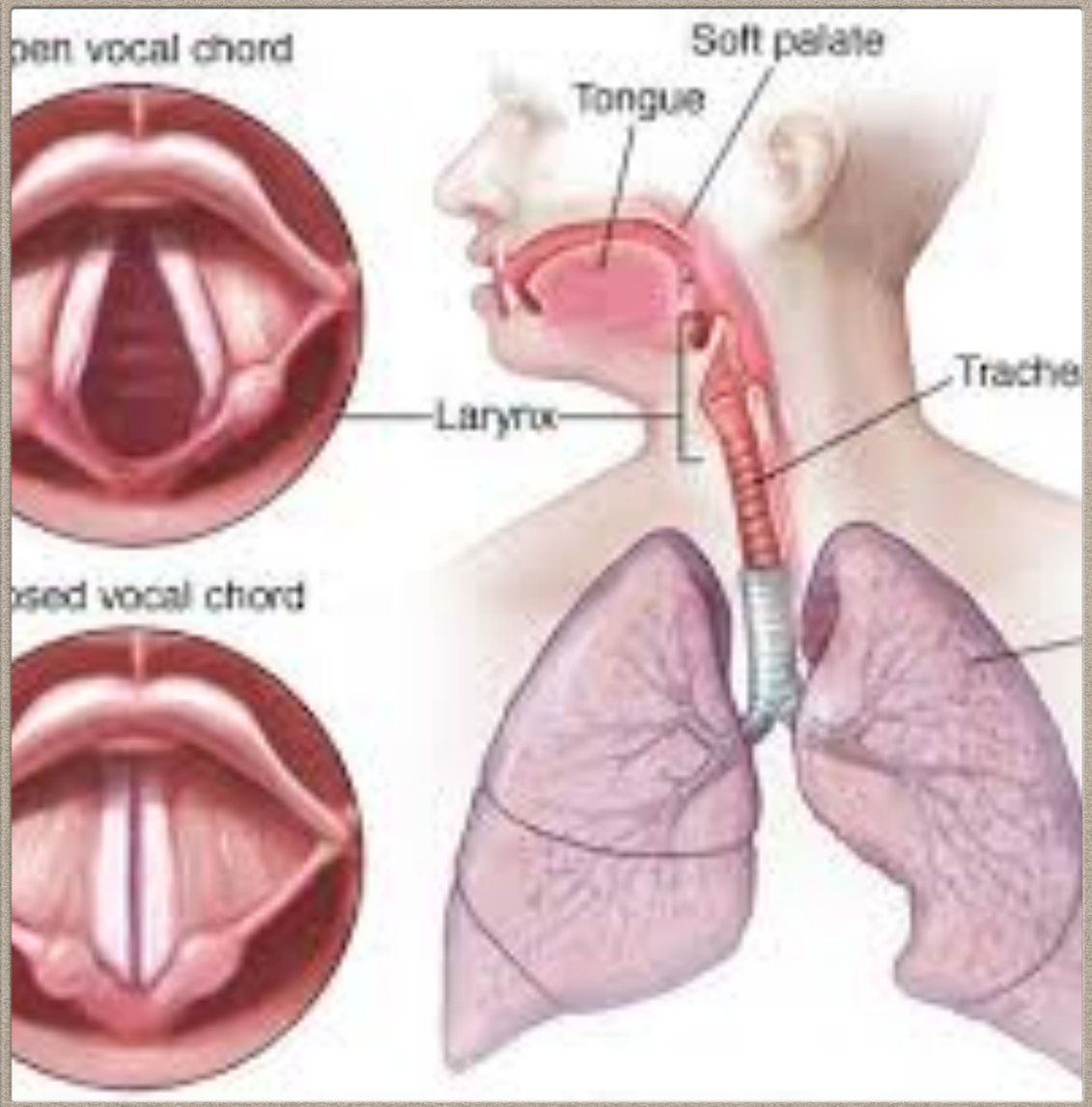
- To ensure academic rigour and reflexivity, I will:
- Acknowledge my dual role as both a researcher and a chorus member, striving to maintain objectivity throughout the data collection and analysis processes.
- Anonymity - By Ensuring anonymity in reporting findings, I hope to encourage more honest and objective insights (Unluer, 2012).
- **Ethical Considerations**
- Participants will be briefed on the study's purpose, voluntary participation, and their right to withdraw. Confidentiality will be ensured, with data anonymised in the final analysis.
- Power dynamics will be managed, ensuring no participant dominates or feels marginalised.
- Include singers from diverse vocal parts and experience levels to ensure a wide representation of perspectives.

Overview of Research

- This research aimed to:
- Identify physiological changes affecting the ageing female voice.
- Assess the psychological impact of vocal ageing on choral singers.
- Investigate barriers to vocal health education.
- Explore the viability of a podcast as an educational tool.

LITERATURE REVIEW - PART 1 THE AGEING VOICE

- The voice is a fundamental instrument for choral singers, and its ageing process has significant implications (Sataloff, 2002; Titze, 2005)
- Physiological changes affecting the vocal mechanism
- The emotional and psychological effects of these changes,
- Evidence-based strategies that can help mitigate their impact.



IMPACT OF AGEING

RESEARCH HIGHLIGHTS KEY CHANGES IN AGEING VOICES (LINVILLE, 2001; VERDOLINI, 2014):

DECREASED VOCAL RANGE DUE TO THINNING AND STIFFENING OF THE VOCAL FOLDS (RAMIG ET AL., 1983; ABITBOL ET AL., 1999).

DECLINE IN BREATH CONTROL CAUSED BY WEAKENING RESPIRATORY MUSCLES (COTES ET AL., 2005; ENRIGHT ET AL., 1994).

INCREASED VOCAL FATIGUE, IMPACTING STAMINA AND PERFORMANCE (HIRANO, 2005; MILLER, 1996).

PITCH INSTABILITY, MAKING IT HARDER TO MAINTAIN VOCAL PRECISION (SATO ET AL., 1998; TITZE, 1994).

HORMONAL CHANGES

- Hormonal fluctuations during perimenopause and menopause have a profound impact on vocal health (Caruso et al., 2000; Sataloff, 2017).
- Declining oestrogen levels result in drier and less pliable vocal folds, increasing vocal strain and roughness (Hamdan et al., 2017).
- Some women experience a deepening of their voices due to hormonal imbalances (Meurer et al., 2004; Abitbol et al., 1999).
- HRT (Hormone Replacement Therapy) has been explored as a possible intervention, though research remains inconclusive on its overall benefits (Gerritsma et al., 2017).

PHYSIOLOGICAL EFFECTS

- Musculoskeletal changes, including sarcopenia (age-related muscle loss), affect vocal strength and endurance (Cruz-Jentoft et al., 2010).
- Joint degeneration, especially in the laryngeal cartilage, impacts pitch control and flexibility (Hirano et al., 1993; Linville, 2001).
- Postural misalignments and reduced lung function further influence breath support and resonance (Titze, 2017; Miller et al., 2017).
- These changes make it more difficult for singers to produce a clear and powerful voice (Sataloff, 2005; Korn et al., 2018).

PSYCHOLOGICAL IMPACT

- Age-related vocal decline often affects a singer's confidence and sense of identity (Cohen et al., 2020).
- Many choral singers report performance anxiety and frustration over their vocal limitations (Kenny, 2012; Welch, 2017).
- The social aspect of choir participation is also at risk, as singers may feel excluded due to vocal decline (Chorus America, 2013).
- Research emphasises the importance of emotional support and resilience-building within vocal communities (White et al., 2013; Blackwood et al., 2016).

MANAGEMENT STRATEGIES

- There are evidence-based strategies that can help mitigate the effects of vocal ageing:
- Breath support exercises to strengthen respiratory muscles (Hixon et al., 2006; Mendes et al., 2017).
- Resonance training to enhance vocal quality and projection (Hirose et al., 2018; Sundberg, 2006).
- Semi-Occluded Vocal Tract Exercises (SOVTEs) to reduce vocal strain and improve fold closure (Espinoza et al., 2020; Gaskill et al., 2012).
- Vocal hygiene practices, including hydration and proper rest, to maintain vocal health (Sataloff, 2017; Brown et al., 2019).
- Incorporating interdisciplinary techniques such as yoga, Alexander Technique, and Feldenkrais to improve posture and vocal endurance (Bailey et al., 2018; Nelson et al., 2002).

VOCAL EXERCISES FOR AGEING SINGERS

Evidence-Based_Vocal_Exercises_for_Aging_Female_Singers

Exercise Name	Purpose	Supporting Research	How to Perform
Lip Trill Sirens	Encourages smooth transitions between registers and enhances vocal flexibility.	Titze (2001); Sundberg (1993)	Glide from low to high and back down on a lip trill, ensuring no tension in the throat.
Descending Sighs	Strengthens head voice and prevents reliance on chest voice.	Doscher (1994); Sundberg et al. (1981)	Start in head voice and slide downward on a relaxed 'oo' or 'ah' sound.
Staccato 'Ho-Ho-Ho'	Improves breath control and supports efficient phonation.	Thompson et al. (2019); Davis et al. (2020)	Produce short, controlled 'ho' sounds on different pitches, engaging breath support.
Vowel Modification	Optimizes resonance for easier high note production.	Bozeman (2013); Sundberg (1987)	Adjust vowels (e.g., 'ee' to 'eh') in higher pitches for ease and resonance optimization.
Semi-Occluded Vocal Tract Exercises (SOVTEs)	Reduces vocal fold tension and promotes efficient airflow.	Roy et al. (2017); Titze (2010)	Sing through a straw or use voiced fricatives (e.g., 'v', 'z') to create back pressure and reduce strain.
Glissando Slides	Expands range by engaging both the thyroarytenoid and cricothyroid muscles.	Dawson et al. (2002); Miller (2008)	Sing smooth pitch slides across the range, avoiding sudden shifts in register.
Humming on Scales	Encourages resonance balance and vocal efficiency.	Sundberg (1987); Ingo (2019)	Hum softly through a scale, focusing on forward resonance and even airflow.
Yawn-Sigh Technique	Relaxes the larynx and reduces tension in the vocal tract.	Titze (1996); Boone et al. (2013)	Take a deep breath, simulate a yawn, then exhale into a gentle sigh on an open vowel.

- The research underscores the need for accessible training and knowledge-sharing tailored to ageing female choral singers (Berry et al., 2016).
- A podcast format can serve as an effective platform for bridging the gap between academic research and practical application (Welch & Howard, 2019).

LITERATURE REVIEW - PART 2 PODCASTS

- GROWING POPULARITY OF PODCASTS
- OVER 50% OF U.S. ADULTS LISTEN TO PODCASTS REGULARLY (MAYER ET AL., 2018).
- IN THE UK, 42% OF ADULTS ARE MONTHLY PODCAST LISTENERS (EDISON RESEARCH, 2024).
- ADVANTAGES OF PODCASTS FOR VOCAL EDUCATION: (HOBSON ET AL., 2021; MCGARR, 2009)
- ACCESSIBILITY AND FLEXIBILITY FOR DIVERSE AUDIENCES.
- ABILITY TO DELIVER COMPLEX VOCAL HEALTH INFORMATION IN AN ENGAGING WAY (PHUA ET AL., 2020; HILL, 2018).
- AUDITORY LEARNING ENHANCES COMPREHENSION (GINTING, 2019).

ADDRESSING VOCAL AGEING THROUGH PODCASTS

- Multidisciplinary Approach: (Dromey et al., 2020; Ko et al., 2021)
- Integration of medical insights, vocal pedagogy, and practical exercises.
- Expert interviews and professional guidance for evidence-based support.
- Inclusion of personal narratives to validate experiences and reduce stigma (Glick et al., 2023).
- Interactivity and Engagement: (Bunn et al., 2022; Planchard et al., 2024)
- Listeners can submit questions and shape content.
- Podcasts can deliver guided vocal exercises.

CHALLENGES AND LIMITATIONS OF PODCASTS

- Potential Drawbacks:
- Quality and reliability of content must be ensured (McGarr et al., 2019).
- Podcasts alone may not replace in-person vocal training (Planchard et al., 2024).
- Listener fatigue due to an oversaturated market.
- Risk of perceived isolation rather than community-building (Glick et al., 2023).

THE NEED FOR A TARGETED PODCAST
GAP IN EXISTING RESOURCES:

- FEW DEDICATED PODCASTS FOR AGEING FEMALE SYMPHONIC CHORAL SINGERS.
- NEED FOR A RESEARCH-BASED, STRUCTURED PODCAST TO BRIDGE KNOWLEDGE GAPS.

- <u>Bridging Research and Practice:</u>
- A podcast dedicated to ageing female singers could serve as an educational and emotional support platform.
- Ensuring high-quality, evidence-based content is key (Berry et al., 2016).

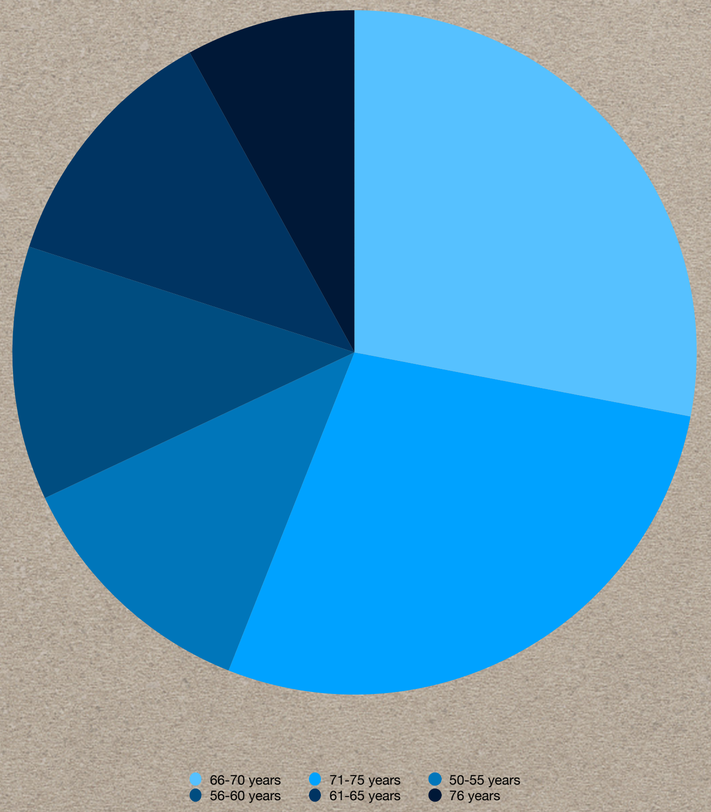
EMERGENT THEMES GUIDING THE QUESTIONNAIRES

DECREASED VOCAL RANGE, ALTERATIONS IN ARTICULATION AND RESONANCE, REDUCED BREATH SUPPORT, STRENGTH AND STAMINA

QUESTIONNAIRE FINDINGS

- Study conducted with 30 female symphonic singers aged 50+.
- Mixed-method questionnaire - 33 open and closed questions (qualitative and quantitative data responses).
- 25 responses returned (83.3% response rate).
- Goal: To explore vocal ageing effects, challenges, and support needs.

PARTICIPANTS DEMOGRAPHICS



- **Age Distribution: What age are you?**
- 56% of participants were aged 66-75.
- 12% aged 50-55, 56-60, and 61-65.
- 8% aged 76+.
- **Voice Types: What is your voice type?**
- Soprano (20%), Mezzo-Soprano (16%), Alto (64%).
- **Experience: How long have you sung in a symphonic choir?**
- 30% had sung in a symphonic chorus for 40+ years.
- **Do you have any formal vocal training? Do you currently work with a vocal coach?**
- 60% had formal training, but only 40% currently work with a vocal coach.

VOCAL HEALTH AND PERCEIVED CHANGES

- **Self-Reported Vocal Health: How do you rate the health of your voice?**
- 64% rated their voice as good.
- 28% rated their voice as fair.
- 8% rated their voice as excellent.
- **Have you Noticed Changes in Vocal Ability? (Last 5 Years):**
- 54% reported changes; 46% reported no change.
- **Most common issues:**
- Reduced vocal range (41%).
- Breath control difficulties (18%).
- Persistent cough (14%).
- Passagio difficulties (9%).
- Other - Harsher tonal quality (5%), vocal fatigue (5%), increased vibrato (5%)
- Increased performance ability (5%)
- 48% reported feeling occasional fatigue after singing

PERFORMANCE IMPACT AN PSYCHOLOGICAL ASPECTS

- **Performance Impact**
- 60% felt changes did not affect performance.
- 40% reported an impact:
- Including range limitations impacting the ability to perform all repertoire (33%).
- Breath control affects phrasing (16%)
- Loss of confidence (16%).
- Increase in ability (!6%)
- **Confidence & Anxiety:**
- 32% reported increased confidence.
- 32% reported no change.
- 32% reported a slight decrease.
- 52% reported occasional anxiety or concern surrounding their vocal performance
- Singers with training had higher confidence - anxiety more prevalent in untrained singers

VOCAL CARE AND SUPPORT STRATEGIES

- **Self-Care Techniques:**
- Hydration (27%), Warm-ups (24%), Breathing exercises (18%).
- 76% had not sought professional advice for vocal concerns - of those seeking help, most turned to singing lessons
- 76% suggested there wasn't enough information and support available to help singers maintain vocal health

SUPPORT, RETENTION AND MEMBERSHIP

- Support from Conductors & Choir Management:
- 36% felt well-supported, 36% neutral, 4% unsupported
- Retention Concerns:
- Only 8% considered leaving due to vocal concerns
- Cross-examination:
- Trained singers and those with peer support were less likely to consider leaving

COMMUNITY AND BELONGING

- The age group citing the greatest importance of community were those in the aged 66-75 years bracket (40%)

HEALTH ISSUES/MEDICATION

- 92% reported no underlying Health Issues
- Of those reporting issues, pain and acid reflux were noted
- 82% reported that they currently do not take any medication
- Of those taking medication - blood pressure medications were most prevelant

EVALUATING THE PODCAST AS AN EDUCATIONAL RESOURCE

- Interest in Podcasts:
- 72% of respondents expressed interest
- Older singers (71+) preferred written resources
- Preferred Content:
- Vocal exercises (32%), expert advice (22%), personal narratives (12%)
- Cross-comparison:
- Digital learning interest highest in 50-65 age group
- Literature supports blended learning models (Mayer et al., 2018; Phua et al., 2020)

PREFERRED FORMAT

56% WANTED EPISODES UNDER 10 MINUTES. INTEREST IN PODCASTS DECLINED IN 71+ AGE GROUP; PREFERENCE FOR WRITTEN GUIDES.

LIMITATIONS

- **Sample Size and Representation** - The questionnaire was only distributed to 30 singers from one symphonic chorus. While 25 responses were returned, resulting in a relatively high response rate, the small sample size limits the generalizability of the findings. A larger, more diverse sample, including singers from different choirs and geographical locations, would provide more representative data.

- **Selection Bias** - All participants were current members of the choir, meaning that singers who may have left the choir due to vocal decline or other related issues were not included, introducing an element of bias.

- **Self-reported Data and Subjectivity** - The questionnaire relied on self-reported assessments, which introduces an element of subjectivity. Participants were asked to evaluate their own vocal health, range, fatigue levels, and performance ability, which may be influenced by personal perception, confidence levels, and psychological factors. The lack of objective measures limits the validity of conclusions regarding vocal decline.

- **Other Factors** - It is prudent to note that vocal health and ageing are influenced by multiple factors, including hormonal changes, general health conditions, vocal training, lifestyle habits, and choir rehearsal intensity. While the questionnaire explored some of these aspects (e.g., medication use, coaching, and training), it did not control for other variables such as diet, hydration, sleep patterns, or previous vocal injuries, all of which can impact vocal range and stamina. Without controlling for these factors, it is difficult to isolate age as the primary cause of the vocal changes reported.

- **Key Takeaways:**
- Vocal range reduction and breath control are primary concerns.
- Confidence remains stable or improves for many singers.
- Need for better vocal health resources—both podcasts and written guides.
- Formal training and ongoing coaching help maintain vocal longevity.
- **Next Steps:**
- Development of podcast episodes tailored to different age groups.
- Consideration of a supplementary written guide for older demographics.

FOCUS GROUP 1 - 4 PARTICIPANTS FINDINGS

- Mixed responses on vocal ageing effects.
- Common issues: decreased range, vocal fatigue, breath control, throat dryness.
- Some noted improvement after COVID-related rest.
- Uncertainty between age-related and hormonal changes.

- **<u>Vocal Health & Maintenance</u>**
- Importance of vocal exercises & early training.
- Techniques like Semi-Occluded Vocal Tract Exercises (SOVTs) are mentioned.
- Interest in clearer guidance for vocal maintenance.

- **Psychological & Emotional Impact**
- Frustration & grief linked to vocal decline.
- Choir participation provides emotional benefits & a sense of belonging.
- Confidence increases with age, despite vocal concerns.

- **Physical Health & Vocal Performance**
- Issues: adult-onset asthma, breath control affected by health treatments.
- Alternative therapies like Pilates reported to improve breath support & stamina.

- **<u>The Role of Community</u>**
- Choirs serve as strong social & emotional support networks.
- Members fear the impact of vocal decline on their participation.
- Hope for honest feedback from leadership about voice quality.

- **Desired Podcast Content**
- Practical Tips: Breath control, vocal exercises, longevity strategies.
- Expert Insights: Vocal coaches, health professionals, choral directors.
- Personal Stories: Experiences of ageing singers.
- Alternative Therapies: Yoga, Pilates, posture & breathing techniques.

VOCAL COACH INSIGHTS

VOCAL AGEING SHOULD NOT BE VIEWED AS PROBLEMATIC.

CHALLENGES: PASSAGGIO MANAGEMENT, BREATH CONTROL, RESONANCE

EXERCISES: LIP TRILLS, VOICED CONSONANTS, ONSET TRAINING.

PSYCHOLOGICAL IMPACT: CONFIDENCE LOSS, FRUSTRATION, ANXIETY.

POSTURAL ALIGNMENT & LOW BREATH SUPPORT KEY FOR LONGEVITY.

CHORUS MASTER INSIGHTS

- Encourages adaptability rather than viewing ageing as a decline.
- Voices change but do not necessarily weaken choral balance.
- Emotional support is vital for singers' confidence.
- Suggests podcasts balance challenges & strengths.

- **Key Research Findings - Triangulation of Data**
- Questionnaires and focus groups supported the data from the literature review that age-related change, including muscle atrophy, reduced elasticity, decreased breath control and loss of vocal range, can significantly affect female singers post-menopause (Sataloff, 2017, Titse, 2017, Abbibtol, 2006) 54% of singers noted range reduction over 5 years. 30% cited breath control as a key concern. However, individual experience varied, with some noting increased ability due to strategic intervention.
- Despite this, the focus group had limited awareness of advanced vocal techniques (SOVTS), suggesting a knowledge gap for a podcast to address
- Expert views aligned with the idea that while vocal changes occur with age they should not be viewed as problematic, acknowledging decreased range, increased vibrato and difficulties managing the passagio, but emphasised that most could be improved through targeted exercise.
- Experts highlighted the importance of consistent vocal practice - "use it or lose it"
- Despite changes in vocal range, the experts reiterate that these changes do not render a voice unusable - adding lower voices bring warmth to the ensemble sound. This contrast suggests that while individuals may feel their voices change significantly, they may be less pronounced at an ensemble level.
- Whilst breath control was cited in the questionnaires and focus groups as problematic, the chorus master did not identify this as a prevalent issue in his direct experience with the chorus. The vocal coach reinforced the importance of postural alignment and connection in maintaining breath support. He did suggest that stamina rather than reduced vocal range or breath control is often the determining factor in a singer's ability to continue in a high-level chorus.
- The psychological impact of vocal ageing emerged as a critical theme. - self-identity, confidence and community belonging are intrinsically linked to vocal ability (Cohen et al, 2020, Clift et al 2010). This was reiterated by the chorus master - "I would imagine the camaraderie of the big social group who perform high-level music is highly important."
- Despite acknowledging the benefits of vocal training, the study revealed a gap in access to structured vocal health education, with 76% of participants stating there was insufficient information available. focus groups emphasised the need for a practical resource with vocal exercises, breath management strategies and alternative therapies.

- Ageing Resources - a key divergence emerged between the chorus master and the survey responses - while 76% of singers felt there were insufficient vocal ageing resources, he did not see a growing need for specialised training, suggesting his concern is maintaining choral blend and balance. In contrast, individuals seek personal vocal maintenance and adaptation. This highlights a critical gap between singers self perceived needs and the perspectives of choral leadership. This discrepancy reinforces the need for an accessible resource such as a podcast.
- Podcast Implications - the research notes that podcasts are effective for knowledge dissemination and can address the knowledge gap in vocal health.
- Flexible, accessible and cost-effective to engage listeners in evidence-based strategies, expert interviews, and personal narratives, however, older respondents preferred written resources - therefore, offer multimodal content.
- Preferred content - vocal exercises for breath control and vocal range, expert advice, real-life stories, practical demonstrations, proper vocal technique, managing performance anxiety, and maintaining vocal longevity.
- The chorus master cautioned against an overly negative portrayal of vocal ageing.
- Limitations- challenges and limitations were identified. Skill acquisition may be limited without interactive componenets - reiterated in questionnaire findings where 25% of participants expressed a preference for in-person vocal technique workshops over podcasts.
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KEY TAKEAWAYS AND FUTURE DIRECTIONS

- Formal training reduces vocal concerns.
- Psychological adaptation varies, requiring tailored support
- Choral conductors should integrate ageing voice awareness into training
- Podcasts are effective but should be supplemented with written resources
- <u>Future Research</u>
- Study experiences of singers who left choirs due to vocal ageing
- Assess long-term effectiveness of podcast-based interventions

QUESTIONS

- Open floor for questions and discussion