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Contents:

Project Proposal Form	3
Exploring the transformative impact of group singing on student nurses' mental health, nurse–patient connection and its relevance to their nursing studies	
Introduction	8
Literature review	11
• Setting the scene: Creative health as a new pedagogical framework in nursing.	12
• Emotional labour, stress and mental health in student nurses	14
• Arts-based interventions and professional identity formation	15
• Person-centred care: Performing for patients	17
• Group singing: Key considerations	19
• Hypotheses	20
Methodology	22
• Ontology and Epistemology	22
○ Insider researcher positionality and reflexivity	
• Session structure	22
• Delivery plan	25
• Data collection tools and rationale	33
• Ethical considerations	34
Results	34
• File locations	36
• Data restrictions and limitations	36
• Qualitative data for pre- and post-singing questionnaires	37
• Thematic analysis	37
• Unexpected and additional themes	38
• Staff feedback thematic analysis	41

• Hypothesis 1: Group singing will improve mood and reduce stress among student nurses.	45
• Hypothesis 2: Participation in group singing will foster confidence, self-efficacy, and key interpersonal skills relevant to nursing	52
• Hypothesis 3: Singing together strengthens teamwork and social cohesion	55
• Hypothesis 4: Performing in a care home setting will positively impact service users, and their reaction will boost nurses' mood, engagement and nurse-patient connection	58
• Hypothesis 5: Students will undergo meaningful and professional transformation during the process of singing and the performance	60
Personal reflection	63
Conclusion	65
References	68
Appendix A: Ethics Form	76
Appendix B: Staff Survey	95
Appendix C: Week 4 feedback form	97
Appendix D: Before Singing Questionnaire	98
Appendix E: After singing Questionnaire	100
Appendix F: Example poster	102
Appendix G: Example social media	103

Project proposal

Project Title: Exploring the transformative impact of group singing on student nurses' mental health, nurse–patient connection and its relevance to their nursing studies.

1.Context

The integration of creative practices into healthcare education has gained traction to enhance the mental well-being and professional development of healthcare practitioners over the past few years (Ridgway, 2023). Creative health is a non-clinical strategy to improve health and wellbeing, using creative activities to improve physical, mental and emotional health and quality of life (Rana, 2024). The passing of the Health and Care bill through parliament in July 2021 established the priority of building effective relationships between creative and social health sectors (UK Parliament, 2022b). Singing offers unique psychological and physiological benefits, including stress reduction, enhanced mood and improved social connectedness (Clift *et al.*, 2001). My project takes place within the University of Chester's nursing programme, building on the success of a wellbeing choir initiative that has demonstrated measurable benefits for staff and medical students in the health and social care faculty. Over the past two years, this lunchtime choir, perhaps, has uplifted participants' happiness and reduced stress levels, providing a strong foundation for this research.

Nursing students face unique stressors, including high academic expectations, emotionally demanding clinical placements, and physically long hours (Dall'Ora, Sainsbury and Allen, 2022). These challenges contribute to anxiety, tiredness, ultimately impacting their ability to deliver the most compassionate care. This project will explore how group singing can address these challenges, enhancing students' mental health, fostering community, and improving their nurse-patient connections.

I operate my music business, teaching singing and leading choirs for all ages. I recently partnered with the University of Chester to teach choral singing to first-year nursing students as part of their Creative Health module, investigating social prescribing as a medical alternative (Williams, Dingle and Clift, 2018a).

This work led me to wonder if the positive effects of group singing vary across age groups. While research suggests that group singing can improve mental health, it's unclear if these benefits are consistent across different age groups (Clift, Manship and Stephens, 2017). The term 'mental health' encompasses a broad spectrum of factors (Fusar-Poli *et al.*, 2020). In this study, I will narrow the focus to examine how group singing influences mood and, subsequently, how mood may intersect with and impact mental health, thereby bridging the two areas of investigation

2. Justification

From my professional experience and practice, I am aware that the demands of nursing education call for creative approaches to support student well-being and professional growth. Existing nursing interventions, such as reflection and journaling, often focus on resilience training and mindfulness but rarely incorporate creative practices like group singing, which has been shown to promote relaxation, mood improvement, and a sense of belonging (Good and Russo, 2022). For nursing students, these benefits extend to essential skills such as empathy, emotional regulation, and communication. These skills are key attributes for effective nurse–patient relationships (Dewar and Nolan, 2013).

This project fills a gap in the literature, which does examine nurses but not specifically how group singing can impact nursing students (Cheraghi *et al.*, 2021). It aligns with national strategies to integrate arts–based approaches into healthcare training and practice (Rana, 2024). This study will investigate how singing influences mental health, professional identity, and the ability to connect with patients, contributing to the evidence base for creative health interventions in nursing education (All-Party Parliamentary Group on Arts, 2017).

3. Intended impact

This research aims to:

- Demonstrate the potential of group singing to reduce stress and improve mental health amongst student nurses.
- Enhance understanding of how creative practices can strengthen nurse–patient connections through improved empathy, communication and emotional resilience.

- Provide insights into the role of group singing in shaping professional identity and promoting self-care among nursing students.

The findings will inform strategies for incorporating creative health practices into nursing curricula, extracurricular activities, and workplace support programs.

Dissemination will occur through academic publications as a co-author with the University of Chester, conference presentations at Chester University, and workshops. Additionally, the study will inspire future singing initiatives within the university and beyond, creating long-term opportunities for nursing students to engage in creative health practices.

4. Outlined intention

This study will adopt a mixed methods approach with both an embedded and concurrent design to explore the impact of group singing on first-year nursing students. This will involve a one-day session over four weeks, culminating in a performance with service users.

This project comprises three primary phases (see Plan on page 20). The initial phase, 'Preparation,' involves conducting a comprehensive literature review on choral singing and its implications for participants' mental health. It will also consider how the reaction of the audience might inform the nurse-patient connection. It also seeks to consider how group singing might bear relevance to their future nursing careers. This stage also encompasses the development of necessary documents, such as questionnaires and semi-structured interview questions.

The second phase, 'Live,' entails the active implementation of the questionnaire during practice and the solicitation of participant consent. Data collection, in the form of paper questionnaires, occurs before the start and end of each weekly session. This will measure changes in stress, energy and happiness. Week Four (performance week) will include a paper-based questionnaire, including open-ended qualitative questions. These insights particularly look to explore student nurse participants' experiences of group singing, its perceived impact and influence on their professional identity.

Moving on to the third phase, 'Analyse,' I, as a pragmatist researcher, will integrate my expertise and the quantitative and qualitative data survey outcomes (Brierley,

2017). Quantitative data will be analysed using statistical methods such as Excel and Wilcoxon to identify significant changes and correlations. Qualitative data will undergo thematic analysis (Braun and Clarke, 2006). Any recurring patterns and themes will be identified and evaluated (Bloomsbury Academic, 2023).

5. Ethics and insider research

This study prioritises ethical standards and participant well-being. As an insider researcher, I am both a researcher and a facilitator. Whilst this status provides opportunities for empathy, rapport building and a detailed contextualised understanding, it also presents challenges and risks such as bias and power dynamics.

The positives of being an insider researcher include being able to build trust, encouraging participants to share their experiences and feel safe. My understanding of the University's culture and my previous experience leading a wellbeing choir enable me to provide practical insight into running singing sessions effectively.

The risks of being an insider researcher should be considered carefully to avoid bias, whether that be in interpreting data or influencing participants' responses. To ensure this does not happen, I will adopt some reflexivity practices and maintain my awareness of my position within the research process.

Another ethical risk is that participants might feel obligated to participate or provide positive feedback because of my role. To mitigate this, I will emphasise the voluntary nature of participation, obtain informed consent, and maintain confidentiality throughout the study. I will present explicitly clear study aims and procedures right from the beginning. Participants will provide their feedback voluntarily and anonymously. They will be made aware that they're not participating in the study will have no negative impact upon their nursing degree. Any other potential risks, such as emotional distress during sessions, will be addressed by providing immediate access to on-site University support staff (J. Fleming, 2018).

6. Personal learning outcomes

Through this study, I aim to: -

- Develop my expertise in designing and conducting a mixed methods study.

- Continue to deepen my understanding and knowledge of group singing and its mental and emotional benefits.
- Contribute to the growing evidence base for creative health interventions in nursing training.
- Facilitate and encourage collaboration between educators, healthcare professionals and researchers to promote singing and arts-based approaches in healthcare education.

Exploring the transformative impact of group singing on student nurses' mental health, nurse–patient connection and its relevance to their nursing studies.

Introduction

The integration of creative practices into healthcare education has gained increasing traction in recent years as a means of enhancing the mental well-being and professional development of healthcare practitioners (All-Party Parliamentary Group on Arts, 2017). Creative health refers to the use of innovative and cultural activities such as music, dance, drama and visual arts, as non-clinical interventions to support physical, mental and emotional health, ultimately resulting in an overall increase in quality of life (Ridgway, 2023). Following the passing of the Health and Care Act (2022) through parliament, a national strategy was launched to emphasise a collaboration between the arts, health and social care (Rana, 2024).

Creative health is now seen by many as one possible avenue for relieving some of the growing pressures on the healthcare system (Rana, 2024). Whilst clinical approaches remain central and creative interventions are not seen as a direct replacement for medications, creative practices and increasingly recognised for their role in prevention and recovery, particularly in a workplace culture. This shift in mindset has been influenced by emerging studies and evidence that creative engagement can reduce burnout and improve well-being amongst healthcare staff (Finnerty *et al.*, 2022). Although the ambitions of the NHS advocating a strong integration of creative health into core health care provision, education, and community settings align with this on paper, the application into everyday health care has been low in adaptation as a whole and therefore has yet to be fully realised (Ridgway, 2024).

Alongside the benefits of other creative practices, group singing has been shown to offer psychological and physical benefits. Research seems to indicate that singing in groups promotes emotional expression, reduces stress, enhances social union, and can increase feelings of belonging and support (Good and Russo, 2022). Within acute healthcare settings, singing has also been found to enhance the well-being of both patients and staff, whilst also contributing to more positive working environments (Feliciano *et al.*, 2022). These results suggest a valuable opportunity

for embedding singing-based interventions into nursing education. Doing this would move it from being a voluntary activity in workplace spare time into being a compulsory, studied, experienced, first-hand patient strategy. Embedding singing into nursing education will have a positive impact for both the students' own and their patients' health (Ridgway, 2023). Nursing students represent a population particularly vulnerable to stress and burnout (Finnerty *et al.*, 2022). Their training consists of demanding academic modules and more emotionally and physically challenging clinical placements. These experiences can have a straining effect on their emotional resilience, self-confidence, and the ability to provide unaffected compassionate care (Su *et al.*, 2021). In response to these worries, this research explores how group singing might serve as a beneficial intervention for supporting the students with their mental health and capability to cope (Lopez, 2018).

This study takes place within the University of Chester's undergraduate nursing programme, building upon an already existing Creative Health initiative within the Faculty of Health and Social Care (Ridgway, 2023). The University of Chester is currently the only institution embedding creative health into the first year of its nursing curriculum, offering a distinctive context for the research (Ridgway, 2024). The study involves first-year nursing students, the majority of whom will have little or no experience with singing in a group. Over the course of three weeks, students will participate in weekly singing sessions designed to develop vocal confidence, cooperation and communication skills (see "Four-week structure and full lesson plan with literature synthesis" on page 23). In the fourth week, they will perform in at least two community-based social care settings. I have been running these sessions for the past two years. Throughout this time, informal feedback (outside of the research context), has consistently pointed to the significant emotional uplift students experience, particularly after performing in week four. This study builds upon these early observations in my experienced role as insider researcher and offers a structured mixed-methods investigation into the nature of this feedback. It is hypothesised that the act of signing together, coupled with the social care performance, will enhance students' confidence, emotional well-being and awareness of the emotional dimensions of nurse-patient connections.

This study aims to contribute to the evidence base for arts-based interventions in healthcare education. Specifically, it will explore how singing can reduce stress,

foster peer support and strengthen attributes such as empathy, active listening and emotional regulation, all skills essential for compassionate nursing (Babaei and Taleghani, 2019; Finnerty *et al.*, 2022). The study findings will inform recommendations for integrating creative health more broadly into healthcare education and workplace wellbeing, supporting a more holistic person-centred approach to professional training.

Literature Review

This narrative literature review aims to critically examine existing research related to the benefits of integrating singing into nursing education. There is an extensive list of research papers available that document the benefits of group singing, and conversely, also some that challenge this subject (Donaghy *et al.*, 2022; Feliciano *et al.*, 2022; Finnerty *et al.*, 2022; Ridgway, 2023; Van de Berg *et al.*, 2024).

To guide my literature review, I implemented a search process. As the subject is relatively new, my inclusion criteria were set to academic, and peer-reviewed studies and articles published between 2000 and – current day. The focus of my search parameters was on music/singing in healthcare, student nurse wellbeing, creative health interventions and identity formation in nurse training. I used the following databases:- Google Scholar, PUBMED, Researchgatenet, CINAHL, Medline, and RCN.on (Royal College of Nursing). Using strong keywords and Boolean operators such as “Group singing” OR “choir” AND “healthcare” OR “nursing education”, I was able to then filter my search results by relevance and align them closely to my themes, ensuring I stayed fully focused on my research question.

This literature review draws together and reflects upon my knowledge as an insider researcher and my previous research. In this review, I am specifically interested in nursing students, the impact group singing has upon their mental health, the specific application of group singing in their nursing education and professional development and the nurse and patient connection. This area is underexplored in terms of a research subject. My study aims to bridge that gap by analysing how group singing can influence the student nurses’ emotional resilience, their empathy and their emerging professional identity.

To aid navigation, this review is structured into the following subject areas-

1. Setting the scene - Creative health as a new pedagogical framework in nurse education
2. Student Nurse Mental Health Challenges
3. Arts-based interventions and professional identity formation
4. Person-centred care - performing for patients

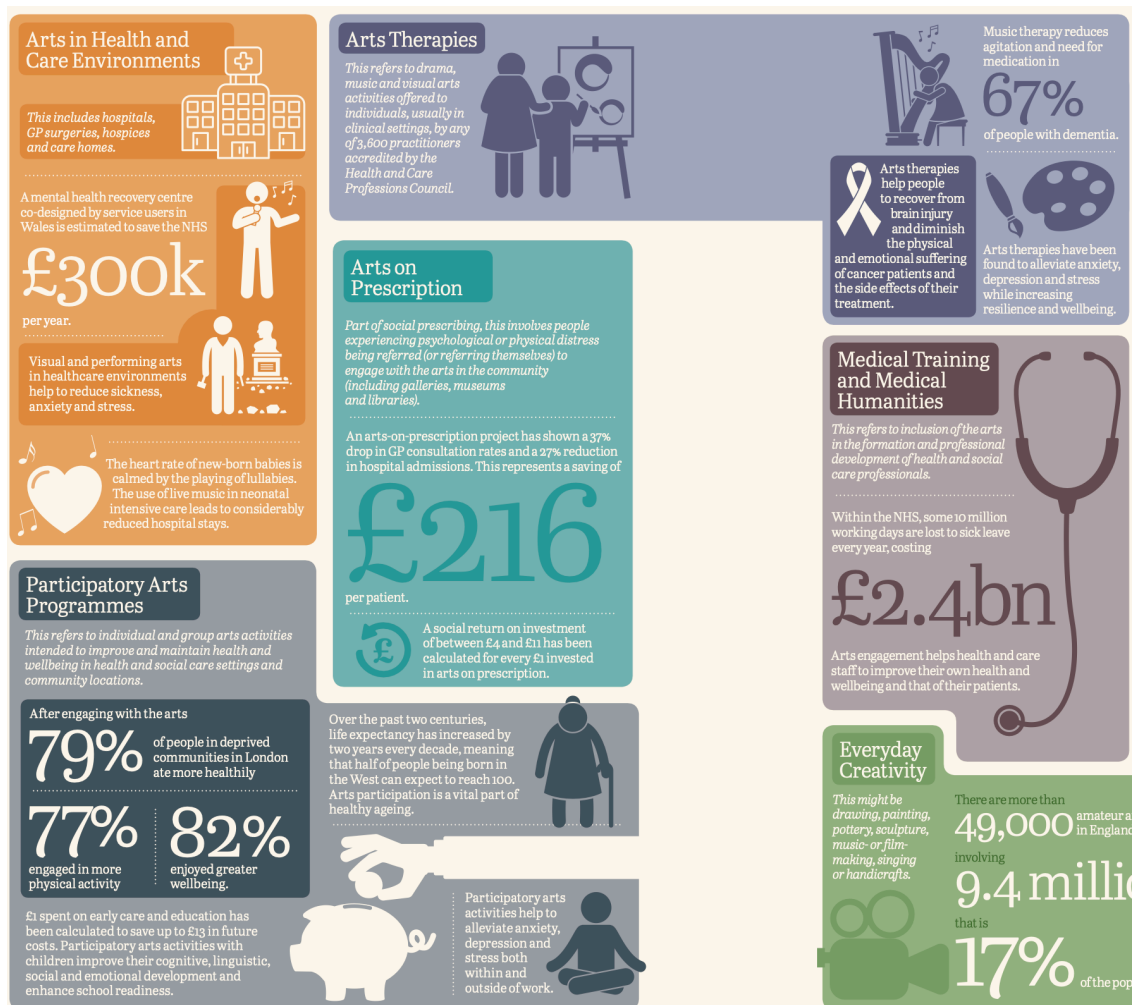
5. Group singing - Points to consider

1. Setting the scene

Creative Health as a new pedagogical framework in Nurse education

Creative health is relatively new as a paradigm in healthcare and education (All-Party Parliamentary Group on Arts, 2017). Defined as integrating the arts into the health and social care system, it has gained parliamentary policy traction partly because of the response to the rising pressures on the care systems and the urgent need to address these issues (Rana, 2024). The World Health Organisation published a scoping review of over 900 global studies showing the value of the arts in prevention, management and treatment across the life course (Health Organisation and Office for Europe, 2012). The 2021 report by the All-Party Parliamentary Group on Creative Health argues for a systemic embedding of arts-based approaches in healthcare and education (All-Party Parliamentary Group on Arts, 2017). The infographic below, Fig. 1.0, taken from the “Creative Health Inquiry Report”, clearly illustrates the wide-reaching benefits of arts interventions. It also highlights how creative health can: improve emotional and mental health, reduce stress, anxiety and depression, strengthen professional identity, reduce healthcare costs and improve staff wellbeing, reducing absence and burnout. It also visualises the amount of time and money Art interventions are projected to save the NHS and the government.

Fig 1.0 Creative Health Inquiry Report infographic



Chatterjee and Camic highlight the role of Creative Arts in their paper and suggest that interventions using such forms can enhance empathy and communication skills among healthcare professionals (Chatterjee *et al.*, 2018). Whilst studies mentioning the benefits of Creative Health exist, there seems to be a gap in research that focuses specifically on nursing students as recipients of creative health interventions (Ridgway, 2023). Most of the existing studies concentrate on patient outcomes, leaving a gap in understanding how such pedagogical frameworks might also impact the learners (Ridgway, 2023). To embed creative health into nursing education would require a shift from traditional methods to more experiential learning models (Lundell Rudberg *et al.*, 2024). It will be most effective if students actively engage in and learn about artistic activities as part of their degree (Ridgway, 2023). If embedded, it is thought that this will develop critical thinking and emotional intelligence (Taşdelen Baş *et al.*, 2022). Problem-solving ability was found to be

higher among those satisfied with their nursing course, and critical thinking was discovered to help close the gap between theory and action. This helps with problem coping and flexibility in practical work placements (Babaei and Taleghani, 2019). As part of the Chester University first-year nursing degree, Creative Health is embedded into their first-year course, University of Chester, 2025. *Adult Nursing BN (Hons) [Full-time]*. [online] Available at: <https://www.chester.ac.uk/study/course-search/adult-nursing-bn-hons-full-time/> [Accessed 21 August 2025].. There are no other further education institutions in the UK currently doing the same, making this a unique experience. Over four weeks, students engage with a range of arts-based interventions including visual art, drama, dance and music.

The report, “Ten proposals for action” demonstrates how learning is enhanced when students are engaged in a collaborative activity (Zepke and Leach, 2010). Students’ well-being was found to be enhanced with creative learning (Zepke and Leach, 2010). Creating educational experiences for students that are challenging, enriching and extend their academic abilities was a key takeaway of that report, as was the importance of empathetic supervision from staff and tutors. Chester University's own research into their learning initiative reported increased student confidence, self-awareness, and a greater appreciation for holistic care approaches (Ridgway, 2023). This internal report might be biased, as it assesses its internal students. This could overstate the benefits.

Whilst the integration of creative arts into nursing education is still developing, my study aims to delve a little more deeply into some of these areas and contribute to a growing field of literature.

2. Emotional labour, stress and mental health in student nurses

Nursing is an emotionally demanding profession due to the nature of their workplace environment (Feliciano *et al.*, 2022). The continuous care and constant demands result in personal feelings and reactions regularly being suppressed and hidden (Lundell Rudberg *et al.*, 2024). As soon as they start their work experience, early on in their studies, student nurses are exposed to situations involving grief, pain and emotional complexity and require strong coping mechanisms (Bittman *et al.*, 2004). Add to this the academic pressures, the demands of clinical practice and their own personal and family pressures, it becomes easy to see why the concept of emotional

labour (managing emotions to reach professional expectations) is highly relevant for people working in this sector (Feliciano *et al.*, 2022). It also shows why many student nurses (22% as an approximation) drop out of their studies before qualification (Royal College of Nursing, 2024). The biggest reasons for departure are cited as emotional fatigue, study pressures, stress and mental health issues (Wharton, 2009).

Group singing has been shown to relieve stress and, as an emerging intervention, can help with emotional regulation (Lopez, 2018). Providing creative relief and allowing student nurses to participate in something they find enjoyable facilitates a break from the intensity of their work (Feliciano *et al.*, 2022). Studies also show that unaddressed emotional issues in student nurses can lead to disengagement in their studies, a disconnection from their patients and a lack of general empathy for others (Vuoskoski and Eerola, 2011). Group singing can present an opportunity for collaboration and a framework within which individuals can freely express their emotions and their vulnerability, reinforcing emotional resilience and providing a well-needed, positive mental uplift (Bonshor, 2014). A study by Koen (2010) found that group singing in highly stressful professions supported emotional release (McLaughlin *et al.*, 2010). This group activity promotes teamwork and boosts confidence (Bonshor, 2014). An increase in work-based choirs across the NHS backs up the theory that singing can reduce the feelings of burnout and stress (Eades and O’Conner Maggie, 2002). To my knowledge, there is only one choir initiative that focuses purely on student nurses in the UK, and that is within the University of Chester’s first year nursing degree course. Having worked on this project with the University previously, I have received much anecdotal positive feedback that the nurses feel “happier”, feel “less stress”, and learn how to “cope better” once they have sung as part of a group. As this is an emerging concept, this study seeks to quantify and qualify this feedback to understand whether group singing really can add benefit to the student nurses’ mental health as they navigate the pressure of work and personal stress in healthcare.

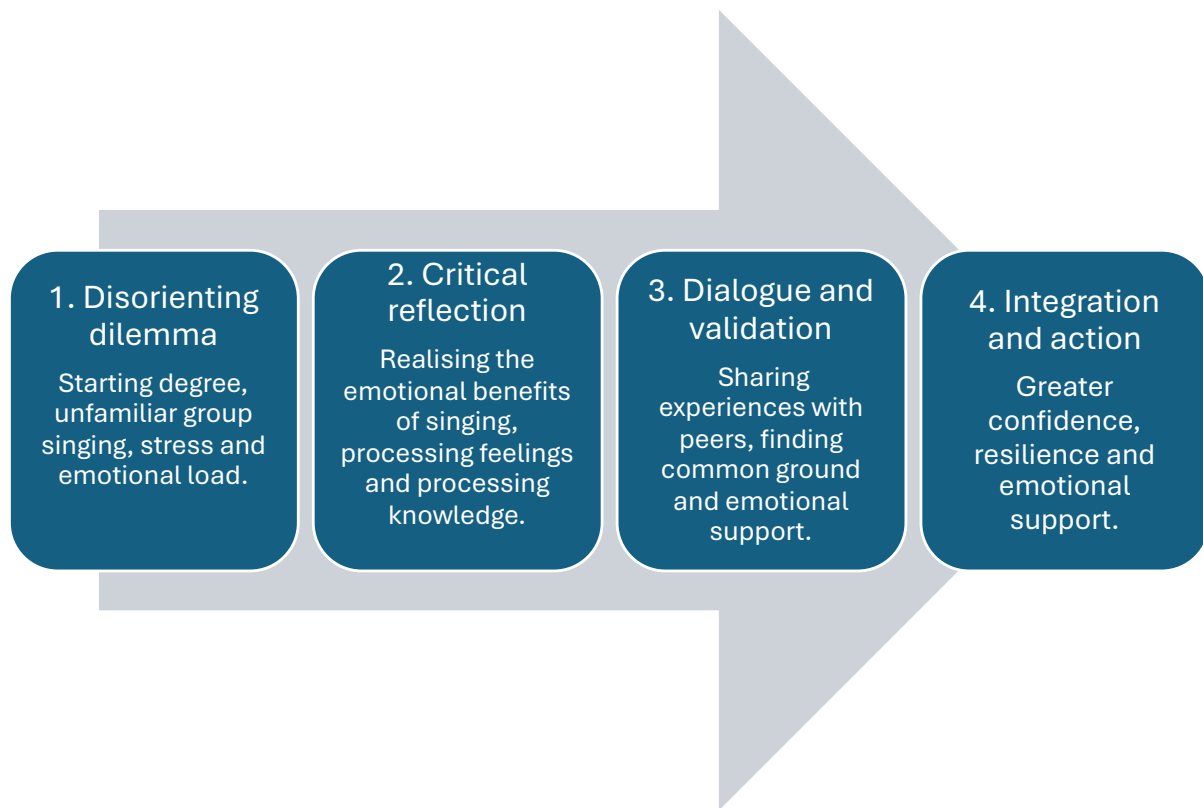
3. Arts-based interventions and professional identity formation

Following any learning programme, students develop opinions, broaden their knowledge of a subject, and gain invaluable experience (Wache *et al.*, 2018). This then leads to them forming their own unique professional identity, which then

becomes their blueprint as they move through different roles (Schubert *et al.*, 2023). During modules, students are encouraged to reflect on their experiences and learnings regularly. Often, reflective frameworks are taught, such as Gibbs to help students process information and support and guide critical thinking (*Using Gibbs' Reflective Cycle Gibbs' Reflective Cycle (or Gibbs' Reflective Model)*, 1988). Kolb is also used by the University to emphasise the value of learning through experience (Kolb and Kolb, 2012). Such is the importance of this reflection that students are given time in their schedule to reflect and are encouraged to share their observations and learnings with their peers and tutors (Costley, Elliott and Gibbs, 2010). Critical thinking itself closes the gap between theory and action, which for nurses is particularly pertinent as they have so much to apply from the classroom into patient and clinical situations, some of which might be critical (Kim and Choi, 2014). Transformative learning theory, posited by Mezirow (1991), hypothesises that critical reflection and experiential learning can lead to deep shifts in perspective and that this, in turn, can cultivate professional growth. Using creative initiatives such as group singing enables students to express themselves freely, exploring their emotional responses to songs and singing together (Finnerty *et al.*, 2022). This sort of activity can enhance empathy, self-awareness, and build a sense of belonging and shared purpose (Jang, 2020). This collaborative activity of singing mirrors the teamwork, communication and emotional response required in a clinical setting (Kirrane *et al.*, 2017; Carson *et al.*, 2018).

Taking the knowledge and learnings from both my literature review and my working experience, I am curious to see if participating and performing will change the nurses' attitudes to singing.

Fig 2.0: Practical application of Mezirow's transformative theory to the student nurses



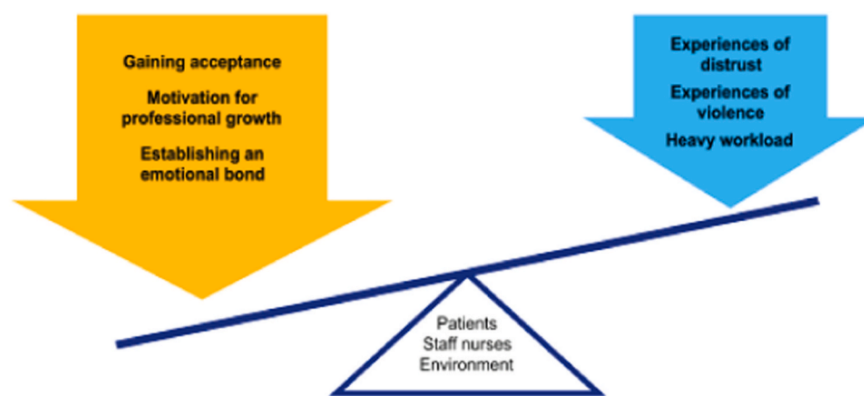
I have taken the steps of Mezirow's transformative theory and applied it to my nurse group singing project (see Fig 2.0). I anticipate that most students will initially feel uncomfortable with singing (Stage 1). As they begin to recognise and reflect on the mental, physical and emotional benefits (Stage 2), their attitudes and overall wellbeing are likely to improve. Through shared experiences and dialogue, they will find common ground with their team (Stage 3), leading to enhanced teamwork and a strengthened sense of professional identity (Stage 4). Johnson et al (2012) reported that nurse professional identity starts early on in education and is just as influenced by informal experience as much as curriculum-based learning (Johnson M *et al.*, 2012). Including singing in the first year of the nursing degree appears to align with this thought and represents an underexplored but emerging tool for identity formation.

4. Person-centred care – performing for patients

The nurse-patient connection is a vital part of care (Royal College of Nursing, 2024). It is not just about completing clinical tasks at the bedside; it is about compassion,

empathy, trust, communication and emotional support (Van de Berg *et al.*, 2024). The diagram below, Fig.3, illustrates the factors influencing students' compassion, showing positive influences like acceptance on one side and negative ones like heavy workload on the other. The balance in the middle highlights the role of the environment, staff and patients in shaping student behaviours (Su *et al.*, 2021; Van de Berg *et al.*, 2024).

Fig 3.0 Learning compassionate care: Experiences of nursing students



However, while the model is helpful, it may oversimplify the complexity of actual care. Compassionate care is shaped by a range of factors, including personal beliefs and work-based policies, which this model does not discuss. For instance, creative interventions, like singing, can foster shared humanity between the nurse and the patient, offering a true emotional connection (Tarr, 2017). It is the reciprocity from nurse to audience that can create moments of a unique mutual engagement (Hartley *et al.*, 2020). This model would benefit from adding creative health practices to show the potential of strengthening and supporting compassionate care.

There are several studies that demonstrate that introducing creativity in nursing care can significantly enhance the nurse-patient relationship and improve health outcomes, including patient satisfaction. For instance, Cheraghi *et al.* (2021) examine the impact of creative play on children whilst in hospital. Results showed that the children who participated in the creative play with the nurses reported higher satisfaction with their nursing care compared to those who did not. It was noted that

the creative aspects of playing fortified the relationships between the nurses and the children.

Similarly, Hartley et al. (2020) explore the effects of creative and collaborative care in mental health settings. This study found that the patients engaging together with nurses experienced a closer therapeutic relationship. Singing is often used as a form of therapy in mental health, boosting emotional well-being with released endorphins, physical well-being with efficient breathing, muscle control and cardiovascular exercise and social connection helping recipients feel a sense of belonging and friendship (Olsson, Von Schéele and Theorell, 2013; Fogg-Rogers *et al.*, 2016; Lynch and Wilson, 2018). Studies such as Lee et al. (2022) have shown singing as a positive intervention in dementia patients, showing that musical memory is the last memory we lose as we age (Fogg-Rogers *et al.*, 2016).

By sharing in musical performances, nurses can directly experience the therapeutic power of music and the impact it has upon an audience as well as upon themselves (Clift, 2020). This reinforces the value of empathy and compassion and helps them relate this to their future nursing practice, again aligning to Mezirow's transformative learning theory (T. Fleming, 2018).

5. Group singing. Key considerations

My literature review identified a plethora of studies that discuss the benefits of group singing for general wellbeing, mental, physical and emotional health (Clift *et al.*, 2001; Livesey *et al.*, 2012; Stewart and Lonsdale, 2016; Damsgaard and Brinkmann, 2022). One additional interesting study was conducted by Clift and Hancox (2010). This systematic review mapped 43 group singing research papers conducted up to 2010, and whilst the study did identify positive outcomes for enhanced mood, reduced stress and improved social connections, it unanimously agreed that none of them focused on singing groups in clinical and vocational training environments such as nursing (Clift *et al.*, 2010). The findings raised concerns that previous studies had lacked substantive impact and questioned whether the research had enough scientific evidence to quantify and validate the benefits that the qualitative data had reported. I agree that there was little scientific evidence; ideally, there would be a balance of qualitative and quantitative data. However, I do believe that qualitative insights can still offer valuable insight.

Further research challenges aspects of creative health education, highlighting varied responses to creative initiatives. For example, Tok and Kesgin (2024) found that participation in drama workshops did not lead to significant improvements in student attitudes, showing that not all students respond similarly to the same creative activities. This suggests there is no “one-size-fits-all” approach. Similarly, Yıldırım and Yelken (2020) noted that while students demonstrated high creativity in group activities, they struggled to connect this creativity to their studies, questioning the relevance and overall benefits of such initiatives. Despite this, the authors agreed that creativity and innovation should enhance nursing quality, provided their purpose and relevance are clear.

Leyva-Moral et al (2022) also reported challenges, as nurses often struggled with the additional preparation and workload involved in creative practices. This extra burden led to increased emotional fatigue, burnout, and, ultimately, a counterproductive effect on their well-being. Finally, Vuoskoski and Eerola (2011) raised concerns about the emotional power of music, suggesting that it could exaggerate its actual impact, with individuals possibly getting carried away in the moment.

Gap in the research

Although creative health interventions such as singing in a group show promise and a positive trend for mental health, there is still little known about their actual impact on student nurses. There is insight lacking in how singing influences their education and their nurse–patient connection in the context of their training.

Hypotheses

Having reviewed the literature, reflecting on both the benefits and the limitations of creative health interventions, and drawing upon my skills and experience, I have developed five hypotheses to explore further. These align to my research question, **“Exploring the transformative impact of group singing on student nurses’ mental health, nurse–patient connection and its relevance to their nursing studies”**. Group singing will improve mood and reduce stress among student nurses. This is supported by literature highlighting the stress relief and mood-enhancing effects of singing together (Clift *et al.*, 2001, 2016).

1. Participation in group singing will foster confidence, self-efficacy and key interpersonal skills relevant to nursing, such as empathy, communication and emotional awareness. These skills align with results in studies showing how creative health activities build soft skills in healthcare students (Rieger *et al.*, 2021; Sandberg, 2024).
2. Singing together strengthens teamwork and social cohesion. This is based on study findings that group singing facilitates social bonding and sense of belonging (Kreutz Gunter, 2014; Thompson *et al.*, 2022).
3. Performing in a care setting will positively impact service users and their reaction will boost mood, engagement and connection for the nurses (Babaei and Taleghani, 2019). This supports the literature findings and relevance of person-centred and compassionate care (Su *et al.*, 2021; Van de Berg *et al.*, 2024).
4. Students will undergo meaningful and professional transformation during the process of singing and the performance. This is grounded on Mezirow's theory of transformative learning and supported by research that shows creative challenges can result in reflective growth and identity development (Mezirow, 1991; T. Fleming, 2018; Schubert *et al.*, 2023).

These hypotheses directly influence the design of the research tools, including Pre- and post-questionnaires, and they also help to guide the interpretation of results post-experiment.

Methodology

Ontology and Epistemology

This project is based on a pragmatic and constructivist way of thinking (Brierley, 2017). Pragmatism balances theory with practicality and, constructivism, sees knowledge as something that's shaped by experience and reflection (Wain, 2017). The research is guided by the belief that real world learning emerges through "doing", this very much aligns to experiential theory and constructivist learning (Kolb and Kolb, 2012; Williams, 2017). It also encapsulates a spiritual lens, a belief in purpose and connectiveness (Williams, Dingle and Clift, 2018b). Through group singing, emotions are shared, and engagement is organic (Carson *et al.*, 2018). Clift (2010) identified a precursory spiritual lens in group singing, highlighting both social and spiritual elements of well-being. As such, my methodology aims to be practical and personally meaningful to all participants.

Insider researcher positionality and reflexivity

This research is shaped by my position of being an insider. I have run choirs for many years, work regularly with University students and have personal demonstrable belief in the emotional and social power of singing. An existing understanding of group dynamics, well-being and the many humanistic moments that occur during singing brings a strength to the study. My experience with people and my pragmatic, empathetic nature also enables me to build rapports quickly, spot emotional responses easily and respond in the moment, thinking "on my feet" as is often required during sessions.

The design of both the questionnaires and the sessions is built on trusted experiences, learning from what has worked well, and not so well in historic sessions and informed by the literature.

Whilst this is positive, my position also comes with some responsibilities. Having previously worked with student nurses, there are inevitably some assumptions and expectations that I should acknowledge before embarking on any data collection. For example, my belief from experience is that singing in a group will lead to an increase in happiness and confidence. This and other assumptions need to be controlled until

all data has been collected and analysed. I will need to ensure that I reflect and review after each session and allow myself the time and space to interpret findings subjectively. Finlay (2002) argued that practitioner researchers who are open about their influences produce research which is more authentic and trustworthy (Finlay, 2002). My literature review also found that art interventions in healthcare were better received and understood when the facilitator or supporting colleague was authentic (Van de Berg *et al.*, 2024). My intention, therefore, is to use my influences as a strength and not a bias. Life events, including losing my father at an early age, have shaped my work and have shaped a belief in finding purpose through helping others. I believe that people find meaning and healing through creative expression, and I intend to use my empathy, experience and skillset to strengthen this study and help others.

Delivery plan

The three-phase plan is shown below. I will need to ensure that each step is complete, although not necessarily in chronological order. A flexible approach will suit best when considering collecting data, interpreting results and then reflecting on the results (Bell and Waters, 2018). This will enable me to feed any key amendments into the data collected in March.

Fig 4.0 Three-phase delivery plan

		Module 6 Plan								
		January	February	March	April	May	June	July	August	September
Preparation	Submit proposal									
	Receive Ethical approval									
	Literature review									
	Create questionnaires									
	Draft semi structured interview questions									
	Update tutor									
Live										
	Distribute questionnaires									
	Conduct interviews									
	Update tutor									
Analyse and Report										
	Collate all results									
	Analyse and interpret results									
	Update tutor									
	Draft submission									
	Amend and change as necessary									
	Final submission									
	Presentation									

Design Rationale

The study adopted a mixed methods approach to capture both mood changes and deeper emotional responses. Then, from my experience from previous studies, a short pre- and post-session questionnaire was written for weeks 1-3 of the research study using rating scales to measure key emotional states (Thompson *et al.*, 2022). The measurement scales (1= strongly disagree, 2=agree, 3=neither agree nor disagree, 4= agree, and 5= strongly agree) allow clear measurement of psychological, social and environmental impacts. The emotional states chosen (happy, stressed, worried, relaxed and connected) were selected as core emotions nurses had experienced in previous studies found in my literature review (Finnerty *et al.*, 2022). The quantitative question set was also supplemented by open-ended questions to gather reflective thoughts on confidence, teamwork, communication, and participants' perceived relevance of singing in nursing. It is important to have a combination of both quantitative and qualitative results for balanced analysis and to avoid vague or superficial findings (Dawadi, Shrestha and Giri, 2021).

Session structure

The following table 1 outlines the structure and thought process behind my planning for the four-week placement. The sessions were designed to support vocal development and nurture confidence, well-being and develop professional identity for the nurses. Each week's activities were carefully planned to align with my experience as a choir and group leader and the research objectives of the study. Aligning nicely with my pragmatist / constructivist methodology, I considered Kolb's learning cycle in each step. As previously mentioned on page 13, students are encouraged to use Kolb's learning cycle as part of their reflection process after each session (Kolb and Kolb, 2013). This, therefore, is a real-life application for them to consider in their reflective logs and provides a framework for them to further understand how experiential learning can enhance their experience and develop their skills (T. Fleming, 2018).

Table 1. Four-week Structure and full lesson plan with literature synthesis

Week	Structure	Detail	Justification	Kolb's learning cycle
1	Introduction and theory	Introduction to me and to the structure of the 4 weeks	So that the students understand the process and begin to bond with the instructor. Positive relationships with facilitators enhances learning outcomes for the students (Chatterjee <i>et al.</i> , 2018)	Concrete experience (CE): The students directly engage with the stretches and the singing
	Welcome and Pre questionnaire	Masters explained and questionnaire given out	Assess baseline attitudes towards singing, measuring initial confidence, mood and expectations. Understanding student baseline emotions can help inform and optimise future sessions (Good and Russo, 2022).	
	Warm up activity	Introduction to their warm up song "Tue Tue" a traditional nursery rhyme from Ghana	The warm up and stretches are designed to relax and prepare students both physically and mentally and ease initial nerves, releasing any tension (Feliciano <i>et al.</i> , 2022).	
	Break (30 minutes)			
	Introduction to stretches	These are performed every week with the nurses and then for the nurses and the audience in week 4		

			The use of Makaton is to introduce inclusive communication and prepare students for social interaction in social care settings (Rieger <i>et al.</i> , 2021). Involving them physically also distracts them from worrying about the singing as their focus is not on how they sound but rather if they are doing the Makaton correctly (Brewer, 2003). This song is sung in unison to bond, and give confidence to the group as singers as they sing the same notes at the same time (Nilsson-Wik, 2019).
Song 1. Makaton	Introduction of the song "Try everything" which also includes signing		
Lunch 1 hour			Break times support the mental and physical needs of the students and enhance the engagement of the next activity (Finnerty <i>et al.</i> , 2022).
Further practice	Everything so far		
Review of all morning activities			
Post course questionnaires	Questionnaires handed out		Review week 1. Allows me to capture any issues and raise to University staff before week 2.

2	Welcome and Pre – questionnaire	A run through of the day and expectation setting	Review of week 1 and progress check. Students are encouraged to share how they feel if they wish. Setting clear expectations builds psychological safety which helps encourage the students to actively participate (Zepke and Leach, 2010).	Reflective Observation (RO): The students reflect on the progress so far and their own vocal range. Group activities encourage collaborative learning and peer interactions, resulting in active observations of their learning and skills.
	Tue Tue warm up	Practice		
	Stretches	Practice		
			These help students to explore their own vocal range, aligning with Mezirow's Transformative Learning that encourages reflection on personal growth and development of new skills (Mezirow, 1991). Emphasis is on teamwork through working together.	
	Group work on range	New vocal exercises. Fun activity to help them assess and explore their own vocal range		
	Break (30 minutes)			

		This two part song appeals to the Non English African students in the group who make up about 40%. This song puts them at ease as many of them speak the language. It also allows them to feel integrated into the group alongside the English speaking students who have the opportunity to experience the culture for the first time (Kreutz Gunter, 2014). Splitting the group into two sections provides performance interest but it also promotes teamwork as those sections bond together more closely (Bonshor, 2018).
Introduction of song 2 “Funga Alafia”	Their second song. This is a welcome song from West Africa.	
Lunch 1 hour		
A review of all songs so far		
Introduction of week 4 location and marketing	Student group work on social care setting ideas and marketing to promote their performance.	Students take away the action to decide on x2 venues. In order to do this they have to contact the venues, present the project and then work together to decide. This helps build decision making as a team, particularly as they do not always agree (Babaei and Taleghani, 2019). An important activity to help them resolve any conflict amicably. It also helps provide the opportunity for some in the group to lead the others as they

			contact venues and explain the process (Wang <i>et al.</i>, 2024). Students were in charge of creating marketing posters to advertise their performances. This provided them the opportunity to share their project with a wider audience and showcase themselves as a group. Examples of these can be seen on page 88 in Appendix F	
	Post- questionnaire		as per week 1	
3	Welcome and Pre – questionnaire		as per week 2	Abstract Conceptualisation (AC) : Students form new concepts about their abilities and their development as singers through reflection and practice.
	Tue Tue warm up		as per week 2	
	Stretches		as per week 2	
	Review songs 1 and 2		Regular practice reinforces skill and builds confidence(Thompson <i>et al.</i> , 2022)	
	Break (30 minutes)			
	Decision and review of week 4 performance locations		Students present back their decisions and rationale	
	Lunch 1 hour			

Introduction of song 3 either "This is me" or "How far I'll go"		Students vote on the song they prefer. This gives them the opportunity to feel in control of their performance important for their confidence and again provides an opportunity for them to work as a team to agree.
A review of all songs so far		
Performance techniques for any nerves, anxiety and how to file in and off stage reviewed		Students rehearse and explore performance techniques to boost their confidence and overcome and worries they might experience. This links nicely back to the literature on how singing reduces stress and increases emotional resilience (Feliciano <i>et al.</i> , 2022).
Performance run through including Nurse introduction and nurse stretches	students are asked to volunteer. They then take the group through the warm up stretches and write a brief introduction to deliver on week 4 to their venues.	This is interesting as it calls upon students to step outside of their comfort zone and volunteer. This provides the opportunity for those who are more confident to perform alone. It also fortifies the team as those who would not want to deliver a solo speech feel admiration for their peers and fully support them Thompson et al.,2022)
Post questionnaire		

4	Meet at University		This provides stability for the students on their performance day when they will be feeling nervous / excited	Active Experimentation (AE): Students apply their new skills (confidence, teamwork, empathy, active listening) in a real world setting and in front of an audience. The audience members who are social care users are appreciative of the entertainment and company the students provide.
	Coach and warm up the group.		Performance is a culmination of personal growth and the team achievement. Performing as nurses, in uniform, in front of an audience encourages both transformation and professional identity development (T. Fleming, 2018). The final performance allows experiential learning where students apply all the skills they have gained over the 3 weeks into their final week. The fact that they are performing as nurses in a social care environment they are most comfortable with, puts them at ease.	

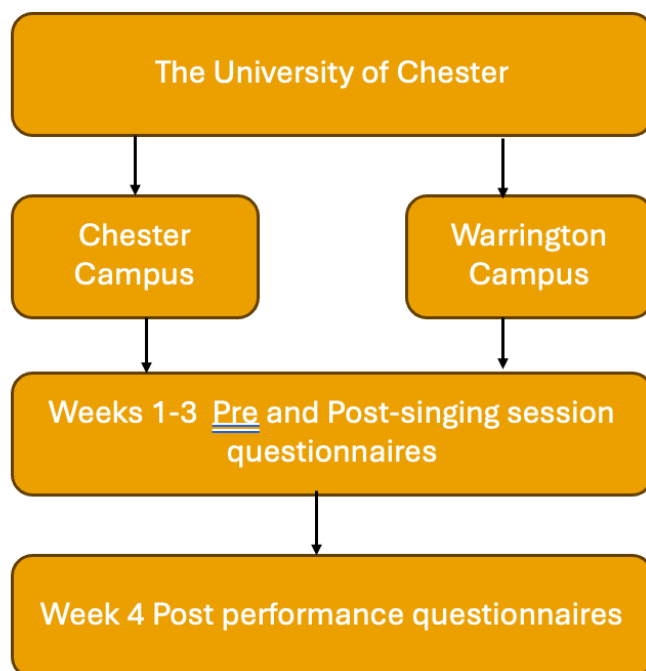
		The final rehearsal serves as an active test of the skills the students have developed over the three-week period (Mezirow, 1991)	
Performance run through			
Venue 1 approx 10:30am	Full performance and refreshments at the end	Students provide biscuits and drinks to the audience. They make conversation and mingle with the service users after each performance. This is an opportunity for them to show their nurse-patient connection (Su <i>et al.</i> , 2021).	
Lunch 1 hour			
Venue 2 approx 13:30			
Post performance questionnaires		Reflective practice is vital for the students to re-enforce their professional identity (Johnson M <i>et al.</i> , 2012)	
END			

Data collection tools and rationale

The questionnaires were designed to be deliberately short and paper based. They were given out at the start and at the end of each session. This is so that participants could give honest, immediate feedback, which might be lost if participants were emailed a form retrospectively. Paper also increases anonymity (Kotheri, 2004). Preventing students from having to log in or use any personal data adds an extra layer of privacy which is important for ensuring responses are honest. I did consider online capture but discounted the idea for students. The authenticity captured on the spot was more in line with Mezirow's transformative learning theory, examined as part of my literature review (Mezirow, 1991). In week 4, the format was slightly adapted. Since this session was outside of the University in a public setting, only a post-performance qualitative questionnaire was distributed to avoid disrupting the build-up and the flow of the session. This still allowed participants to share reflections on the impact of the performance experience, particularly around audience interaction, confidence and emotional engagement (Costley, Elliott and Gibbs, 2010). The full data collection structure is summarised in Fig 5.0 below:

Fig 5-0 Data collection flowchart

Data collection Flowchart



The results were analysed using Excel, Mann-Whitney U tests for statistical significance and manual thematic analysis.

Participants

Participants were all first-year nursing students from The University of Chester. Groups from Warrington and Chester campuses were included in the study and there were no exclusion criteria to ensure inclusivity. Attendance fluctuated each week due to illness, placement demands or absence. Participants were not expected or required to be singers to participate but were reassured that previous singing experience was not required. Each group session, which formed part of their assessed “Creative Health” module, was timetabled for approximately 40 students.”

Students were mixed age, mixed gender, and a mix of English-speaking and multiple language students.

Performance venues

The final performance venues were as follows:-

Chester

- VivoCare Chester
<https://www.cheshirewestandchester.gov.uk/residents/health-and-social-care/adult-social-care/getting-support-from-adult-social-care/vivo-care-choices>
- Chester Lodge <https://www.chesterlodge.org.uk/>

Warrington

- Belong <https://www.belong.org.uk/locations/warrington>
- Ryfields <https://www.yourhousinggroup.co.uk/im-looking-for-a-home/property-search/ryfields-warrington/>

Ethical Considerations

Ethical approval for this study was granted by The Voice Study Centre and UWTSD. No personal data was collected from participants. Questionnaires were anonymised. They were completed on paper in the room. The nature and the aims of the study were explained to all participants at the start of the session. Everyone was handed a

questionnaire, and it was clearly explained that it was optional to participate. If they did not want to be involved, they simply handed the sheet back blank. This therefore protected those who didn't want to be singled out for not participating, as well as protecting the identity of those who did participate (Mager and Galandini, 2020). All anonymised data captured was safely stored in compliance with data protection. As participants were new to singing and the topics of mental health and emotional well-being were key to their well-being it was important to remain vigilant throughout all sessions (Walliman Nicholas, 2001). Key reflective thought was given to how the students responded to songs and situations after each session (Kotheri, 2004). The sessions took place in a familiar environment within the University, and the final performance was chosen by the participants. All students were aware of their support network within the University and could contact them at any point before, during or after the sessions for support if required.

Results

Questionnaire and data locations

The full anonymised data can be accessed here

<https://docs.google.com/spreadsheets/d/1SN5BmtIBFunab57NUaaGYfoGLhKmN7uC/edit?usp=sharing&oid=115049554345083705607&rtpof=true&sd=true>

Data restrictions and limitations

There were several limitations which impacted the data collection and analysis in this study. These must be considered when reading and interpreting the results:

1. Incomplete responses: Many students left questions blank or gave one-word answers when more detailed responses were required. Some also marked themselves as “full of energy” despite saying they were tired, which led to inconsistencies when trying to understand and match the data.
2. Absenteeism: Students sometimes missed sessions due to illness or other reasons. This led to fluctuating participant numbers each week, which made data matching more complicated.
3. Anonymity: As the data was anonymous for ethical rigour, accurate matching was impossible to track individuals’ progress across sessions and sites. This prevented the use of paired statistical tests such as the t-test or Wilcoxon signed rank test, which would have provided a more accurate measure of change. Instead, the Mann-Whitney U test was used, which compared independent groups but did not account for within-subject variability (Thombre, 2024).
4. Language Barriers: The multinational group of students meant that everyone had the same level of English proficiency. This affected the understanding of some questions and impacted the accuracy of some responses (McAllister and Irvine, 2002).
5. Subjectivity: Emotional states are subjective, and some students reported feeling stressed but did not mark it down in their answers. This introduces potential bias in the data.
6. Inconsistent completion: Some students did not complete both the Pre- and post-questionnaires. This led to missing data, which affected March Chester week one (for example).

Qualitative data for Pre and Post singing questionnaires

To fully understand the qualitative data gathered pre- and post-session, I performed a thematic analysis across all open-ended questions, weeks 1-4. A full version of the thematic analysis can be found in the full data file in the following location

“Appendix s”

To sort the data, I identified and coded the themes as follows:-

- | | |
|---------------------------------|---|
| 1. Teamwork and social cohesion |  |
| 2. Service Users |  |
| 3. Nursing |  |
| 4. Transformation |  |
| 5. Confidence |  |
| 6. Communication |  |
| 7. Empathy |  |
| 8. Mood |  |
| 9. Stress |  |

Once identified, I then linked the relevant theme to each hypothesis, ranked them based on frequency and filtered any unexpected themes. The results found in Table 2:

Table 2. Thematic analysis results table

Theme	Frequency of mentions	Relevant Questionnaire question reference
1. Teamwork and social cohesion	18	W4 Q7 Teamwork, Wk4 Q8 Skills gained
2. Confidence	15	Q3 Happy, Q9 Energetic, Q11 Skills Improved, W4 Q1 Performance
3. Mood	13	Q2 General Mood, Q3 Happy, Q9

		Energetic, W4 Q4 Feeling today
4. Stress	12	Q4 Stressed, W4 Q5 Service Users
5. Empathy	11	W4 Q6 Impact on Self, W4 Q9 Any other comments
6. Communication	10	Q12 Nursing, W4 Q9 Comments
7. Service Users	9	W4 Q5 Service Users Reaction
8. Transformation	7	W4 Q6 Impact on Self, W4 Q9 Comments
9. Nursing	6	W4 Q9 Comments, W4 Q7 Teamwork

Unexpected and additional themes

There were several recurring themes I was not expecting:

- Joy in Singing – Rediscovering or discovering a love of music, experiencing joy beyond expectations
- Physical release – Multiple mentions of movement, dancing and physical benefits. Whilst these were positive comments, particularly on week 4, there were some comments on weeks 1-3 where students mentioned they did not realise how tiring it could be to perform. This, however, did not affect the overall scores of energies increasing before, versus after the session.
- Mindfulness and Escape – There were mentions of using singing as a stress release and positive distraction from the daily pressures of academic studies. This aligns with the paper discussed in my earlier literature study by Feliciano et al which considered how activities such as singing could provide emotional regulation, and help prevent stress (Feliciano *et al.*, 2022).

- Creative Identity – There were comments from the nurses who had recognised themselves as creative beyond their clinical identity

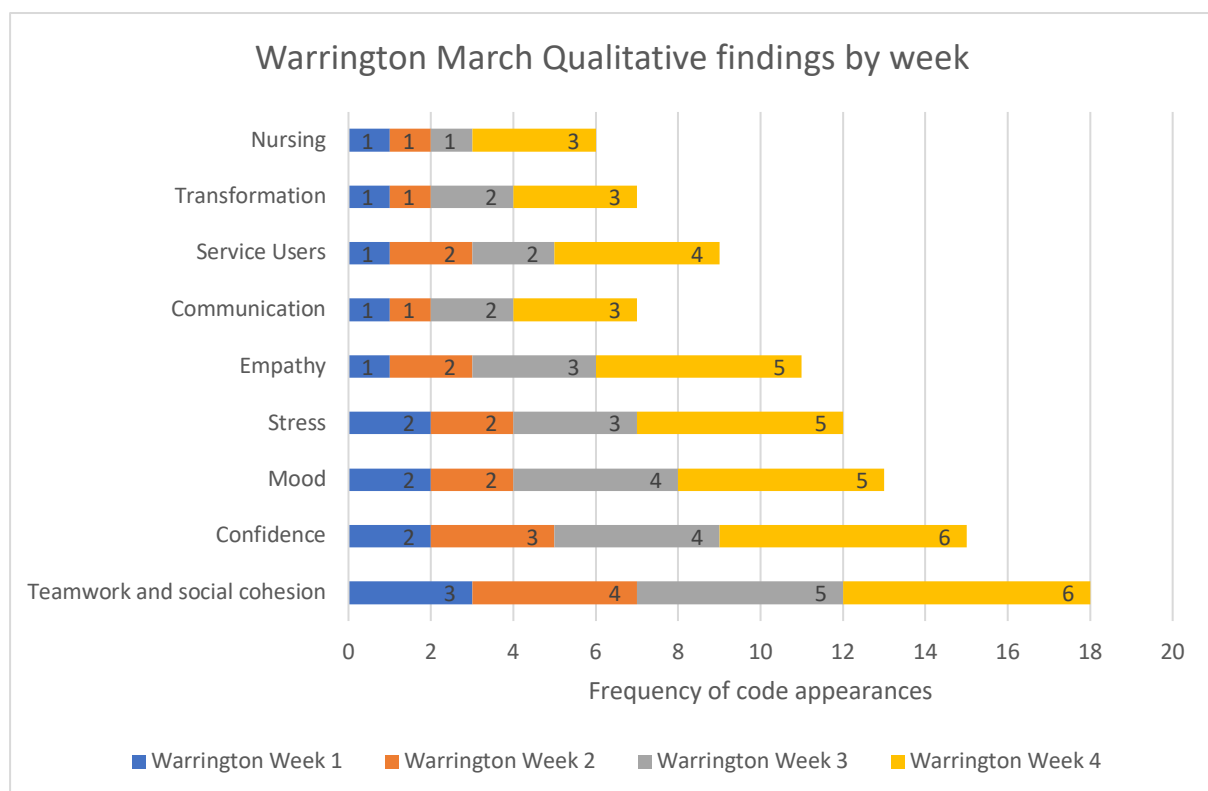
Themes by site

To understand if there were any key qualitative changes by week and site, and help me understand how the nurses' emotions, moods and opinions changed over the four weeks, I interpreted the data further and discovered:

Warrington themes over the four weeks

Fig. 6.0 below shows the qualitative findings for Warrington over the four-week span of the research.

Fig 6.0. Warrington March Qualitative Findings by week



Teamwork and cohesion have the highest frequency of mentions, which is significant compared to other themes. This indicates that group dynamics and working together were key learning areas for this group of students. Confidence is the second-highest theme, this shows that students felt empowered by the experience.

Teamwork – this increases each week. The highest increase is in week four, which implies that their performance together demonstrated the importance of working as a group.

Confidence – also increases over time and peaks in week four. This implies that the nurses became more confident as the weeks progressed and that the end performance helped solidify their feelings.

Mood – The mood comments remain consistent across all weeks, with a small increase over weeks three and four.

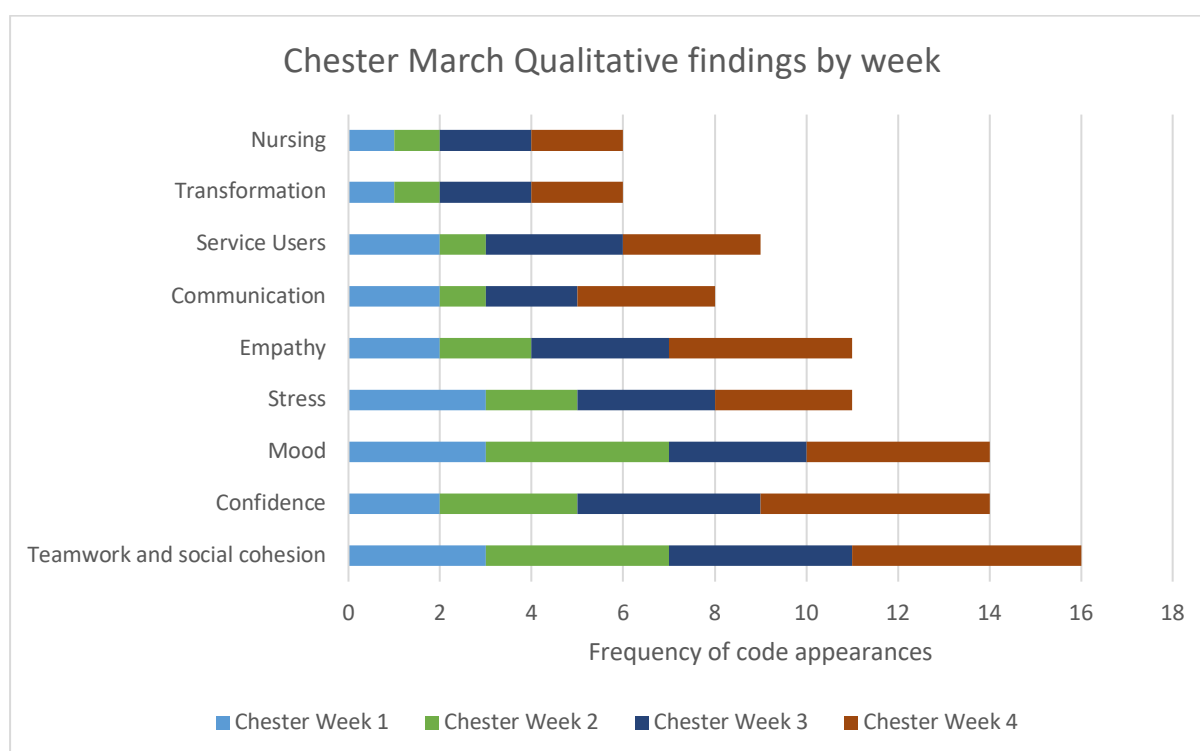
Stress – Stress is consistently mentioned across all weeks, with a rise in week four. It suggests that the nurses clearly understood the benefits of singing, particularly in later sessions.

Empathy – This sees a notable increase in week four. This suggests that by the end of their performance, the nurses were more emotionally aware and empathetic, both towards each other and towards service users.

Chester themes over the four weeks

Fig 7.0 below shows the qualitative findings for Chester during the three-week research.

Fig 7.0 Chester March Qualitative findings by week



Much like Warrington, teamwork and social cohesion and confidence are the top-ranked comments, increasing over time and peaking in week four.

The pattern of the other themes also echoes the trend shown in the Warrington data. The final week, week four shows notable increases in teamwork, confidence and empathy.

Staff Questionnaire results

A questionnaire was sent to the staff members who had attended and supported the students in their sessions with me. Staff members would start the day and the afternoon sessions with the students. This ensured that the students completed their sign-in forms and allowed them to raise any issues and questions they had with a staff member of the University. In week four, the member of staff allocated would attend the final performances so that they could observe the students and the service users. I also asked that the member of staff who came to the final performance delivered a thank-you speech at the end. This was so that the nurses could receive feedback from their tutor, providing them a boost and an even further sense of achievement (Dall'Ora, Sainsbury and Allen, 2022). It also enabled the staff to thank the care home management and residents on behalf of the University, but

alongside both of these reasons, it allowed the staff member to freely speak to both students and service users about their experiences as a nurse and how they felt about the four-week placement the nurses had experienced. It was because of this verbal feedback that I decided to try and capture the comments officially from week four.

I decided to use Google Forms instead of the paper-based questionnaire that I had used for students. As the staff members were aware of my research study and the fact that they already work online daily, I knew that the risk of them not completing the form was very low. There were five staff members who had attended and supported the sessions in total. These were invited to participate, and 100% completed the form. I asked open-ended questions about the performance, the nurses and the staff observations. A full copy of the question set can be found in Appendix B.

The main themes were as follows:

Table 3. Staff feedback thematic analysis summary

Theme	Summary of findings	Example supporting quotes
Increased confidence and mental health benefits	Participating in the choir enhanced student nurse confidence, well-being and their mental health	“More confidence, greater social connectedness, calmer, happier” “Singing has helped to boost mental health and well-being during placement” “Many of the nursing students have outlined that being part of the choir has boosted their mental health and wellbeing during placement. It was lovely to see the relationship that Jen had

		built with the learners, they had a trusting connection and were made to feel heard and valued in all sessions.”
Development of key skills required for nursing	Participating in the choir improved skills that are crucial for nursing such as, empathy, teamwork, communication, emotional awareness and stress management.	“Increased confidence in communication, improved teamwork and collaboration” “Greater empathy and emotional awareness” “Stress management techniques” “I was aware many of the learners were very nervous before the performances, however following the performances everyone was smiling and chatting amongst themselves and with the service users. It boosted the mood across the entire room!”
The impact of the group singing on the service users	The service users showed positive responses to the student singing, including joy and social interaction	“The residents were so excited to take part” “Service users actively became engaged, with by joining in the warmup activities, dancing, singing

		and even joining in with the choir to perform”
The role of creative health in healthcare settings	Music and singing were seen as key tool for improving mental health and creating a sense of community.	“Singing creates a feeling of community and togetherness” “Singing makes us feel good and can help individuals who are isolated, lonely or low in mood”
Development of emotional awareness, teamwork and active listening	The choir was seen as a tool to actively teach and demonstrate teamwork, emotional awareness of self and others and active listening.	“Active listening skills are developed during songs, and teamwork”

These insights are integrated into the results section to help provide a more comprehensive understanding of the impact of group singing.

The following section contains the findings for the five hypotheses identified following my literature review and my experience of running choir sessions. After reviewing all the data, the most comprehensive and reliable results emerged from March, with weeks 2-4 for Chester and weeks 1-4 for Warrington.

Each hypothesis result will be addressed using :

- Quantitative data, if relevant. Statistical analysis, such as Mann-Whitney U, will be applied if possible. If this is not viable, then charts will be created using Excel.
- Qualitative data, if relevant. This includes results from student and staff questionnaires.

Hypothesis 1. Group singing will improve mood and reduce stress among student nurses.

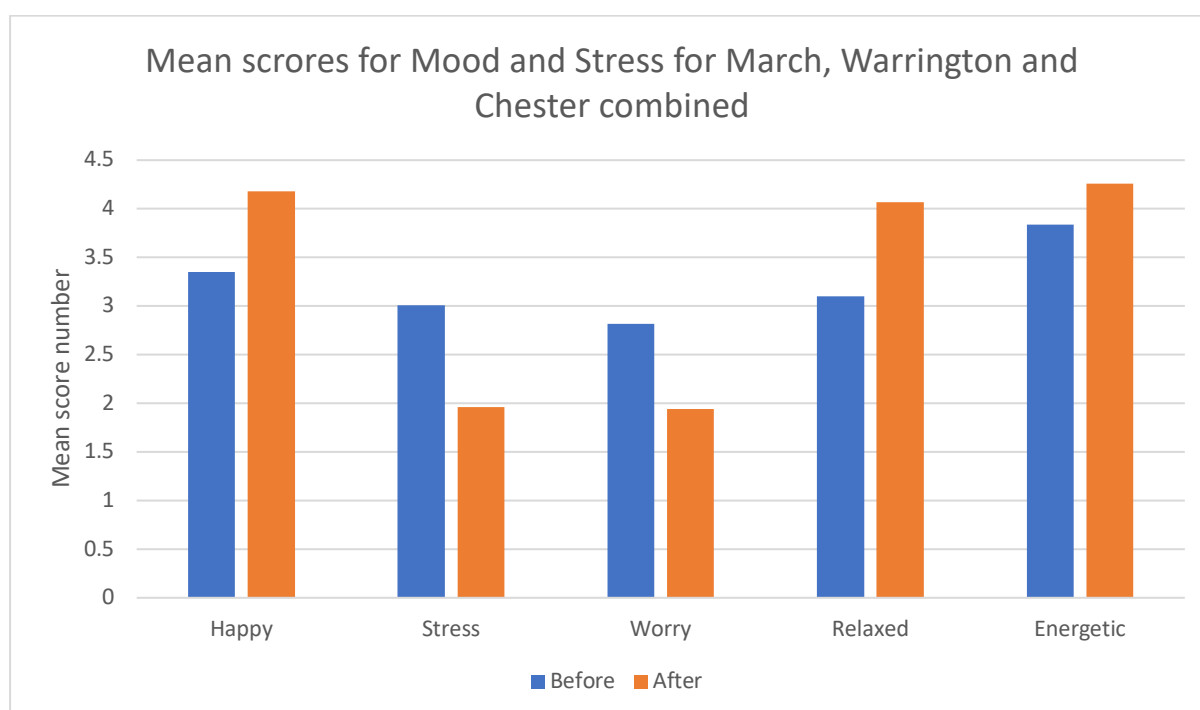
Quantitative results

Taking all the scores from the quantitative mood and stress question results, I produced a set of mean results for weeks 1-3, both by site and combined. Analysing the mean scores of the quantitative questions set across both Warrington and Chester in Table 4 and Fig 8.0 below, there are some key differences between the before and after scores. The results show a clear uplift in mood across all measures: Increased happiness, feeling more energetic and relaxed, and a notable reduction in stress and worry. The results all support the first hypothesis and align with literature on the increased mood and reduction of stress from singing as a group (Clift *et al.*, 2001; Clift, 2020).

Table 4. Mean Scores for mood and stress before and after singing

	Warrington	Chester	Combined	Difference
Q3_Happy_Before	3.31	3.43	3.35	
Q3_Happy_After	4.19	4.16	4.18	+0.83
Q4_Stressed_Before	2.92	3.21	3.01	
Q4_Stressed_After	1.81	2.25	1.96	-1.05
Q5_Worried_Before	2.77	2.93	2.82	
Q5_Worried_After	1.85	2.16	1.94	-0.88
Q6_Relaxed_Before	3.08	3.14	3.1	
Q6_Relaxed_After	4.19	3.84	4.07	+0.97
Q9_Energetic_Before	3.73	4	3.82	
Q9_Energetic_After	4.33	4.13	4.26	+0.44

Fig 8.0 Graph showing Mean scores for mood and stress before and after singing



Mood and stress statistical significance by week and site

My analyses showed that by week and by site, all the mood and stress question results followed the same positive pattern. The next stage, therefore, was to see if any of the results proved statistically significant. This is important so that the research can be viewed as reliable and not down to chance. Due to the anonymous nature of the data, I was unable to match individual “before” and “after” responses. This meant when looking for statistical significance, I was unable to use a paired samples t-test or Wilcoxon signed rank test; these, although widely used, require paired data from the same participant. The nature of the rating scores also meant the paired samples test was inappropriate and so alternatively, I carried out a Mann-Whitney U test, which uses two independent groups of data, was ideal for my dataset (Thombre, 2024). Whilst this allowed me to explore statistically significant differences in happiness, stress, worry, relaxation and worry before and after singing, it did limit the fact that this did not account for within-participant/repeated measures dependence.

All tests were run using Jamovi, a free and user-friendly statistics platform I was able to use myself (Jamovi.org, 2025). Within the application, I used the “Mann-Whitney U” function in the ANOVA module to compare pre and post scores across

Warrington and Chester, split by week. I was unable to run tests for every week as there were some sample numbers that did not match; however, I was able to run tests on each site and week where the data was complete.

For a result to be statistically significant, the p-value should be less than 0.05 (or 5%). The results to note were as follows:

Table 5. Mann-Whitney results for Warrington – March Week 2

Question	Result	Statistically significant?
Q3_Happy	p=0.0065	Yes
Q6_Relaxed	p=0.0025	Yes
Q9_Energetic	p=0.0001	Yes
Q5_Worry and Q4_Stress	Not statistically significant (p=0.0754)	No

Table 6. Mann-Whitney results for Chester – March week 3

Question	Result	Statistically significant?
Q3_Happy	p=0.0172	Yes
Q5_Worry	p=0.0007	Yes
Q6_Relaxed	p=0.0349	Yes
Q9_Energetic and Q4_Stress	Not statistically significant Although stress was very close (p=0.0645)	No

Summary by site

Table 5 shows statistically significant improvements in **Happiness**, **Relaxation** and **Energy**, post singing.

Table 6 shows statistically significant improvements in **Happiness**, **Relaxation** and **Worry**, post singing.

These results show statistically significant changes in multiple mood indicators. It is worth noting that despite not being able to prove statistical significance every week

due to fluctuating numbers and incomplete data, the consistency and positive patterns across all weeks with both Warrington and Chester, validate the findings.

Hypothesis 1 Qualitative findings – Student feedback

The uplifts of mood and decrease of stress found in the quantitative data, are echoed in the qualitative feedback gathered from students. Ranked 3rd and 4th in the review of thematic analysis, students were keen to point out the changes in their mental state after singing in weeks 1-3 and particularly in week 4. Comments included:

“I felt very happy and energised”

“Singing makes me feel better and more connected”

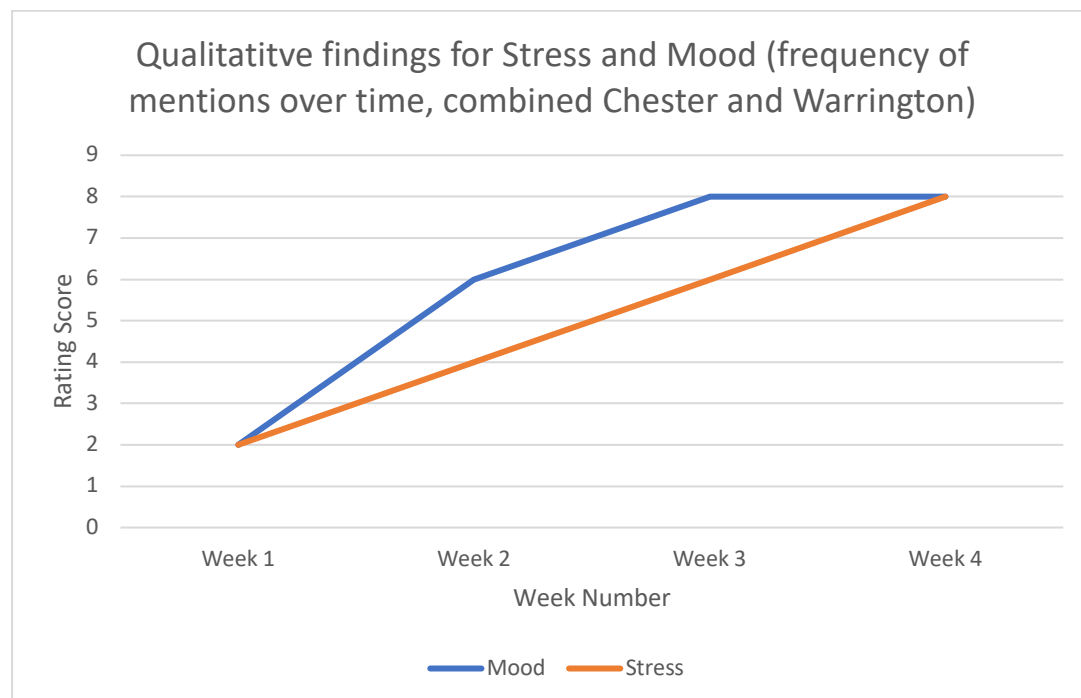
“I felt less stressed after singing”

It was less stressful than I expected”

“Singing made me feel less stressed; it was very relaxing”

The impact of the positive mood trend and mention of impact on stress can be seen in Fig. 9.0, showing the frequency of the common themes.

Fig 9.0 Frequency of qualitative common themes across Chester and Warrington



General mood before and after

Before: The moods reported before the sessions included:

- “Stressed”
- “Tired” (the top answer before singing)
- “Low”
- “Anxious”

After: The moods after singing shifted towards:

- “Happy”
- “Relaxed”
- “Energised”
- “Better than before”

This was consistent across both sites. Interestingly, not all students reported an uplift in mood after singing. I observed that, in each group, there was always at least one or two students who disliked singing or who did not want to participate in the Makaton, for example. The group majority did report an uplift, and it was interesting that in the groups where most of the students were positive, the students who had been feeling low at the start experienced an uplift. This was a positive ripple effect, as discussed by (Barsade (2002), actively demonstrating how group behaviour can be influenced positively or negatively, depending on the majority and strength of personalities in the group.

Word clouds

Using visual representations such as word clouds to show qualitative results is a powerful way to help interpret immediate recurring themes. The prominent terms provide a clear view of the data and can enhance understanding with this clear and simple method (Tufte, 2006)

In this case, Fig 10.0 shows a high frequency of words such as “Tired” and “Happy”. There is a real mix of negative and positive words, which is different to the second word cloud showing the impact of singing. Figure 11.0 shows a high frequency of words such as “Group”, “Together” and “Enjoyed”. This is a visible shift in mood, which further supports the qualitative data for hypothesis 1.

A word cloud of emotions and states of mind. The words are arranged in a circular pattern, with 'Happy' and 'Good' being the largest and most central. Other prominent words include 'Energetic', 'Relaxed', 'Stressed', 'Anxious', 'Excited', 'Optimistic', 'Calm', 'Content', 'Great', 'OK', 'positive', 'fun', 'Joyful', 'Feeling', 'Low', 'Giddy', 'Fine', 'mood', 'energy', 'Chaotic', 'Enthusiastic', 'Passionate', 'Helpless', 'Blank', 'Cheerful', 'Meh', 'Empowered', 'Overwhelmed', 'Lively', 'Much', 'Confident', 'trying', 'needing', 'Relieved', 'Slightly', 'uplifted', 'Harmonious', and 'Happily'.

[illegible]

Students were asked this question on the pre-singing questionnaire, however the post singing questionnaire did not follow up the question and so a match of pre and post was not possible. Another restriction to this data set was the fact that students answered 'Yes' and 'No', and the majority did not elaborate. This meant that if they answered 'Yes', there was no indication whether they thought their mood change would be positive or negative. Despite these data restrictions, many comments indicated that they thought their mood would positively change, citing *"Yes, I expect to feel better after singing"* and *"Yes I'm looking forward to feeling less stressed"*.

Students were asked on the pre-questionnaire if they were looking forward to the session. Many students left this field blank, which does not allow for analysis. I also did not ask the question in the post-singing questionnaire, and so this question is not as reliable as the others for consideration. There was a general trend of students showing positivity to participate, but there were also a lot of feelings of nerves. This is not unusual for a group of non-singers who were being asked to participate in a group singing session. Overall, while this question didn't provide strong data for analysis, it's clear that the students had mixed emotions—excitement alongside some apprehension—which is entirely expected when stepping outside of their comfort zones in this kind of activity (Irons *et al.*, 2020).

Hypothesis 1 Qualitative findings – Staff comments

The following staff feedback provides extra valuable insight into student mood and stress levels post singing and further backs up the quantitative results and student comments.

Increased happiness

“The students appeared more energised and connected during and after the singing sessions”

“It was clear from their expressions that they felt more uplifted and positive after singing”.

Stress reduction

“The students seemed less tense and more relaxed post session”

“I noticed that students who initially seemed anxious or stressed were noticeably more at ease after the group singing activity”

Emotional well being

“Many students reported feeling a lot better emotionally, with some even mentioning feeling ‘rejuvenated’ after the session.”

“There was a sense of calm and reduced anxiety throughout the group after singing, and it was observed that stress was noticeably reduced in those who had been quite anxious at the beginning”.

Literature Synthesis

Studies by Clift et al., (2001) and Livesey et al., (2012) highlight the positive effects of group singing both in boosting mood and reducing stress. Feliciano et al., (2022) further emphasise that singing breeds emotional expression, which directly contributes to stress reduction, particularly in healthcare environments. Good and Russo, (2022) found that singing in groups can lead to an uplift in mood, thereby reducing anxiety.

In conclusion, the combination of reviewed literature, quantitative and qualitative data supports Hypothesis 1, which posits that group singing would improve mood and reduce stress. The statistical analysis confirmed significant reductions in stress and improvements in mood. The Man Whitney U test showed statistical significance in happiness, relaxation and energy increases, and worry decreased post singing. The qualitative comments from both students and staff further confirm these findings. Both sets of data are consistent and show that group singing has a positive emotional impact on the student nurses.

Hypothesis 2. Participation in group singing will foster confidence, self-efficacy and key interpersonal skills relevant to nursing, such as, empathy, communication and emotional awareness.

Quantitative data

There were no rating scale questions that asked about confidence directly on the pre-- and post-questionnaires. Instead, this was openly discussed in the qualitative data. I was, however, able to use the Happiness, Energy and Stress measures as these are closely related to confidence and emotional well-being.

As discussed in hypothesis 1, the average happiness scores rose from 3.35 to 4.18 after singing consistently across both sites. This is a significant rise and could suggest a boost in confidence. The average stress scores dropped from 3.02 to 1.96. Although the Mann-Whitney U test did not show stress as statistically significant, it was close ($p=0.0645$), and the energy ($p=0.05$) and happiness ($p=0.03$) scores were found to be statistically significant. The average energy scores

saw an increase from 3.82 to 4.26 after singing. This increase of energy after singing supports the concept that singing fosters self-efficacy.

To investigate the relationship between stress reduction and an increase of confidence further, I was keen to see if I was able to see if there was a statistically significant link with increased confidence. To do this, I looked at mediation analysis, which takes a predictor (singing condition before and after), a mediator (stress) and a dependent outcome (confidence); however, I could not do this since I only asked about confidence after singing and not before. This, therefore, only measures the change, not the outcome. Instead, I ran a regression test using Jamovi to look at whether lowering stress predicts greater confidence after singing (Pajankar, 2022). This test aimed to investigate if students who felt less stressed after singing also felt more confident, linking stress reduction to confidence gain.

Table 7 Regression analysis results

Jamovi found the results to be as follows:

Measure	Value
R (correlation)	0.342
R ² (Variance explained)	0.117
Stress_level coefficient	-0.298
p-value	<.001 = statistically significant

The results above show that the model is statistically significant ($p < .001$), with stress explaining around 12% of the variance in confidence scores ($R^2 = 0.117$). The coefficient for stress was negative ($B = -0.298$), which indicates that as stress decreased, confidence moderately increased. This supports the hypothesis that stress reduction plays a role in improving students' self-confidence, which occurred after singing.

Qualitative Data

The open-ended questions reference confidence, empathy and communication skills multiple times. The thematic results table on page 27, shows that confidence was the second-highest theme mentioned by students, with empathy and communication also being mentioned multiple times. Some key comments for each theme include:

Confidence

"I felt much more confident after the singing sessions, I was able to express myself better"

"Singing made me feel stronger and more capable, I felt like I was improving"

Self- Efficacy

Although students don't mention this directly, they discuss how they have felt empowered during the weeks of the sessions and particularly in Week 4 as they perform together.

"I didn't think I could sing in front of others, but now I feel more comfortable doing it"

"It boosted my belief that I can perform tasks I didn't think I could"

Empathy and emotional awareness

"I felt more connected to my peers and more aware of their feelings after singing together"

"I realised that singing with others brings us closer, and I felt more empathetic towards them"

Communication

"Singing in a group helped me listen better and communicate my thoughts more clearly"

"We worked as a team, which made communication flow more naturally"

Staff comments for Hypothesis 2

"The students seemed to develop a stronger sense of empathy, they were more in tune with each others' emotions"

"The students were more confident in their abilities and seemed more comfortable in group settings after the singing sessions"

There was a notable change in them, they seemed more self assured"

Literature synthesis

The development of interpersonal skills and engaging in a creative group activity has been connected in the literature research results. Rieger et al., (2021) and Sandberg, (2024), highlight in their work that creative health activities, including singing, can boost self-efficacy and improve communication skills. Building emotional awareness and empathy are identified as core skills required for nursing (Sandberg, 2024). Mezirow's transformative learning theory also suggests that experiential learning activities can lead to a personal transformation, greater confidence and self-awareness (Mezirow, 1991).

In conclusion, the combination of reviewed literature, quantitative and qualitative data supports Hypothesis 2, which posits that group singing fosters confidence and key interpersonal skills relevant for nursing. The student and staff comments highlight the emotional awareness and communication improvements that were experienced after singing and during the four-week process. The findings from the regression analysis resulted in an unexpected statistically significant result, proving that a decrease in stress resulted in an increase in confidence.

Hypothesis 3. Singing together strengthens teamwork and social cohesion.

Teamwork was prevalent throughout the sessions. From the first week together, the students used each other to help alleviate nerves and any worries they had during the session. The team dynamics of the group increased each week as they sang in sections, worked on Makaton sign language together, chose their performance locations and practised the songs together (Quigley and MacDonald, 2022). This has always been a core part of their sessions and is always an element that they have commented on following week four and their final performance.

Quantitative results

Using question 9, "How connected to the group do you feel before / after singing", the results show that there is an increase of connection after singing.

Fig 12.0 below shows the mean scores, by site and combined demonstrating the increase of connectivity.

Fig 12.0 Mean values for group connection before and after singing

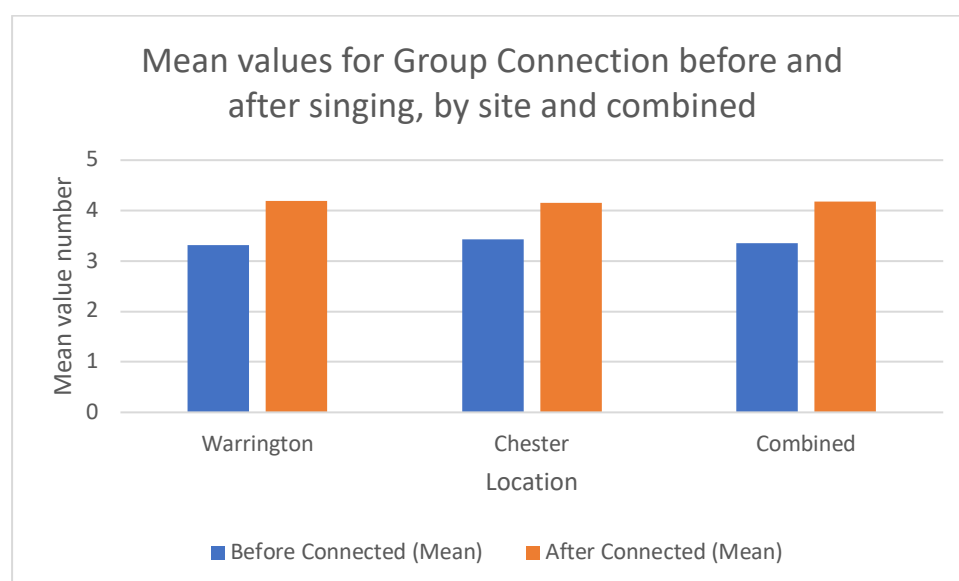


Table 8 below shows the before and after average scores as well as the increase.

Table 8 Mean values for group connection before and after singing

Site	Before Connected (Mean)	After Connected (Mean)	Difference
Warrington	3.31	4.19	0.88
Chester	3.43	4.16	0.73
Combined	3.35	4.18	0.83

As with Hypothesis 1, I ran a Mann Whitney U test using Jamovi to gauge statistical significance. The results $p=0.515$ did not prove statistically significant, despite this, considering the uplift in the pattern of the data shown in the graph and table above, coupled with the qualitative data, suggests that the groups did feel more connected and had a greater sense of team post singing.

Qualitative data

Questions 7 (teamwork) and 8 (skills gained) both on the week 4 post-performance questionnaire showed an increase in both themes week on week. Notably, both sites showed a steady increase in teamwork each week, with a peak in week 4. This is encouraging and aligns to the quantitative data. As week 4 was their performance

week, it makes sense that their sense of teamwork increased as they pulled together to perform for service users, their first time in front of a live, user-centred audience (Kirrane *et al.*, 2017).

Confidence was the top ranked theme from the “Thematic results table” shown on page 27. Student comments included:

Teamwork

“Singing brought us closer together as a team. We worked together and helped each other improve”.

“I felt more connected to my peers. Singing as a group really boosted our teamwork”

Social Cohesion

“There was a sense of unity in the group. We all felt more connected after each session”

Staff comments for Hypothesis 3

“Students demonstrated stronger teamwork as the sessions went on. They seemed to communicate better and work together more effectively”

“The students appeared to be more cohesive as a group. Singing together helped them bond and work in harmony”.

In both the student and staff data, there were mentions of a strong sense of group unity and collaboration. They also noted an improvement in team communication. Working together enabled those who were shy to integrate and feel included in the wider group (Kirrane *et al.*, 2017). They attributed this to the singing sessions.

Literature synthesis

There are many literature examples of studies finding group singing to be beneficial for teamwork and social cohesion. Studies by Kreutz Gunter, (2014) and Thompson *et al.*, (2022) found that group singing creates a sense of belonging, strengthening social bonds. This effective teamwork and cohesion are particularly effective in healthcare settings where lives can depend on effective collaboration (Feliciano *et al.*, 2022).

In conclusion, the reviewed literature, qualitative and quantitative data support hypothesis 3 positing that singing together strengthens teamwork and social cohesion.

Hypothesis 4. Performing in a care setting will positively impact service users, and their reaction will boost nurses' mood, engagement and nurse–patient connection.

Although there was no quantitative data specifically for week 4, weeks 1-3 demonstrated statistical significance for mood, specifically happiness, relation and energy. In hindsight, it would have been advantageous to have asked the students to rank that mood with a Likert question set. That would have allowed a deeper analysis into whether week 4, and their performance boosted their mood further.

Qualitative results

Both performances were performed in care homes across Chester and Warrington. The audience was made up of a mix of residents, staff and some of the University senior staff who came to watch the student nurses. Across both Warrington and Chester, it was observed that the service users were actively engaged, physically and emotionally. These were clear signs of enjoyment. There were even some service users who were otherwise non-communicative from day to day who joined in with the nurses and were keen to talk to them after the performance. This shows a clear link to the literature study, where, once participating in activities together, the nurse–patient connection was strengthened (Van de Berg *et al.*, 2024).

Student comments reflecting on their performance included:

“It was amazing to see the service users engage and be so happy. It really boosted my mood and gave me a sense of accomplishment.”

“The performance boosted my confidence. It was uplifting to see the service users enjoy the singing, and it made me feel more connected with them.

“I felt more confident and connected with the service users after seeing their positive reactions. It was a rewarding experience”

Staff feedback

“The service users were so engaged; they were smiling and joined in with the singing and dancing. It was uplifting to see them participate.”

The service users were very interactive, clapping, singing along, and some even requested songs. It was great to see them so happy”.

The staff feedback also commented on the nurses’ ability to engage with the service users. This showed that the performance allowed the nurses to develop key communication skills, empathy and an even deeper understanding of working together as a team than they had experienced in weeks 1-3. Some relevant comments include:

“The performance brought everyone together. The service users looked happy, and the nurses seemed more confident and relaxed after the session”

“It was heartwarming to see the students become so confident. The service users were involved and seemed to really enjoy themselves. It boosted the overall mood”.

“The students really bonded as a team, and the reactions from the service users were just fantastic. The joy they shared together was incredible”

Venue feedback

Each social care performance venue provided positive feedback. They were very proud to have the student nurses there to perform and were keen to share this on their social media channels.

An example of this feedback can be found on page 89. This is a social media post from Belong in Warrington and shows the gratitude and joy conveyed. It also proves how much of a positive impact the student had on the social care setting.

Literature synthesis

The results above confirm the findings written by Babaei and Taleghani, (2019) who discussed how music interventions can enhance the emotional connection between patients and nurses. Hartley et al (2020) found that creative interventions, which included singing, can create meaningful interactions between nurses and patients. This in turn, can boost emotional well-being and communication.

In summary, although I was unable to prove statistical significance for hypothesis 4, the literature review and qualitative data prove that there is a strong link between the positive service users' reaction and the nurses' mood. It also highlights group singing as a therapeutic tool for enhancing the nurse-patient relationship during training. This, as the literature demonstrated, is key in a clinical working environment (Babaei and Taleghani, 2019).

Hypothesis 5. Students will undergo meaningful and professional transformation during the process of singing and the performance.

This hypothesis was my strongest assumption based on the anecdotal feedback that has been provided to me from both previous student nurse cohorts and my community choirs. I have previously described week four as the week "where the magic happens", when I've been asked about the process of singing. As the session leader, each week is deliberately planned to progressively builds momentum and skill, so that when week four arrives, the students are equipped to be able to stand up in front of an audience, perform songs in two or three part harmony without the need for lyrics, deliver an introduction speech and guide the audience through a set of warm up exercises (see lesson plan on page 21) (Nilsson-Wik, 2019). The introduction speech and warm up exercises are not delivered by me (I warm up the crowd, introduce myself at the beginning and bring the students onstage); instead, they are designed to get both the students and the service users to participate together and have always resulted in an uplift of positive emotions. The anecdotal feedback has been described as "transformational" by staff and students alike. There is also usually an outburst of emotions as the students watch the service users sing along. This manifests often, as happy tears from the audience and nurses. Week four brings people together and bonds them emotionally.

Quantitative data

The statistical relevance found in hypothesis 2 on page 39 proved that decreased stress led to an increase in self-confidence. It also showed that Week four was the most clearly defined stress decrease as students joined together to complete their placement. It makes sense that week 4 is a pivotal mark as they celebrate successful completion and experience the endorphin uplift of finally performing in front of others.

Qualitative data

Many student comments highlight that the students not only experienced an increased confidence, but also that the choir experience led students to reflect on the process and their transformation. For example: -

“I could not believe that we performed so well. We put our best into ensuring everything went well”

“We have had the payoff, we have seen the happiness on people’s faces and had the chance to engage with them it makes us realise that it is easier than we thought and is nice and brings people together”

“At first I wasn’t looking forward to the session as I was shy and I didn’t know the group well. But by the end, I really enjoyed the performance and the placement and I am getting on really well with the group”

“Weeks 1-3, pessimistic week 4 I enjoyed it a lot I understand the impact and benefits”

“Gained confidence and courage more and more. Encouraged each other fun and interesting and understand our peers”

“My opinion of singing grew each week with the 4th week being the highlight of my placement”

There is also a clear indication in the responses that the students reflected on their roles as future nurses. There were comments showing how participating in group singing helped them to see the value of creativity and teamwork in their studies and nursing. For example:

“Things don’t have to be perfect, we can mess up but always try. Music singing, and dancing can bring people together”

“The singing and dancing will help in Nursing as it brings positivity”

“Working with my cohort improved my collaborative skills which are essential for effective patient care. Also interacting with patients, I have to listen actively and respond according to their needs”

Staff feedback further backed hypothesis 5 with comments such as:-

“It should be part of nurse training and not just child or mental health fields”

“It made me realise how creativity and emotional awareness are integral to nursing”

“I was already converted!! The pride in their achievements was evident”

“Students have gained confidence, by taking themselves outside of their comfort zone”

The impact on service users also reinforces the theory that singing fosters emotional and social connections, enhancing the nurse-patient connection as mentioned in the literature study.

“As we entered the service users suddenly smiled, they enjoyed having company. During the performance they were dancing and singing along which they mentioned afterwards was a lovely experience for them”

“Service users actively become engaged, either by joining in the warm up exercises, dancing, singing and even joining the choir themselves. In addition, a few residents who rarely spoke to others actually engaged and communicated with the students. Furthermore, the staff became involved and it brightened their day by seeing the residents so happy and responsive.”

“Wow! The service users were so engaged in the performances. You saw smiles on everyone's faces and the residents were so excited to be part of such a happy and uplifting activity. There was real joy and passion shared across the room.”

Literature synthesis

My translation of Mezirow's transformative learning theory to the student nurses on page 15 proposed that the group singing would take the nurses on a journey of discovery step by step. The theory aligns with my prediction and suggests that experiential activities can lead to professional and personal transformation (T. Fleming, 2018). This, as I anticipated, is particularly relevant in healthcare settings where emotional resilience and a strong identity are critical.

In conclusion, the literature analysis and qualitative data strongly support hypothesis 5, that students undergo meaningful and professional transformation throughout the four-week placement and particularly in week 4.

Personal reflection

As an insider researcher, I have had the privilege of witnessing the transformative power of singing together with groups of student nurses. These students would not identify themselves as singers and yet participated in an activity that proved to be profoundly impacting. One of the most rewarding aspects of this project was observing the intergroup dynamics and relationships evolve. It was inspiring to see how the more confident students helped those in their group who were initially scared of singing. The sense of community grew stronger each week and this made everyone feel valued.

I expected week 4 to be emotionally rewarding, and it did not disappoint. One memorable performance took place at Vivocare, an adult mental health day centre in Chester. When we arrived, I was immediately reminded of the strong nurse-patient connection that exists there. The service users, as soon as we walked in, reached out to hold our hands, keen to chat or for those who could not talk, to connect with us physically. Immediately, the nurses reacted, displaying the strongest nurse-patient connection I have ever seen. The students performed to rapturous applause, and when I asked if the audience wanted to join in, those who were able to got up and stood alongside the students in formation and sang. This was a truly beautiful moment, as the students sang next to the service users, sharing a moment together of unity and emotional connection (Babaei and Taleghani, 2019).

After the performance, the students led a karaoke session with the service users, creating an atmosphere of joy and celebration. The service users would not let the nurses sit down: it quickly turned into a party atmosphere. It was a heartwarming experience, seeing the joy and openness between the nurses and the entire room.

In Warrington, another standout moment occurred when the nurses selected their own song to perform, "Eh Yahweh". This song held a special significance for one of the nurses, whose first language was French, followed by Ghanan making English his third language. Many of the students were familiar with the song from their cultural backgrounds, and they embraced it wholeheartedly, even incorporating their dance moves. This moment was deeply emotional; this song was nostalgic for some nurses and created an unforgettable connection within the group. It was a powerful reminder of how music bridges cultural divides, bringing people together.

The mix of cultures and nationalities encouraged the groups to be more accepting of each other. Their willingness to listen and understand each other was even brought out in their lunch breaks, where they would bring in their national home-cooked food for everyone, including me, to try, something I found deeply beautiful, particularly knowing that some of the students were far away from their own families. Through this shared experience, they found a familial connection within the group, strengthening their bonds and creating a supportive, collaborative environment.

The four weeks were both challenging and rewarding, especially as I navigated the task of leading large groups of 30-plus students on my own. While it was at times mentally and physically tiring, seeing the students' growth and knowing how much they appreciated the process in the end made it all worthwhile. The flowers and cards they gave me at the end were a touching gesture, reaffirming how meaningful the experience was for them and me. My own experiences of loss and finding meaning through creative expression have shaped my professional identity and have allowed me to use personal understanding to support participants from the heart. Ultimately, the transformation of the students and the emotional connections they formed with their peer group and the service users were a powerful reminder that creative health and singing together can emotionally and professionally move mountains.

Study Conclusion

This study set out to explore the transformative impact of group singing on student nurses' mental health, nurse-patient connection and, and its relevance to their nursing studies. As outlined in the project initiation form, the primary aims were to demonstrate how group singing could reduce stress and improve mood, foster empathy and emotional resilience, and enhance the ability of student nurses to connect with patients. By examining both qualitative and quantitative data collected over four weeks from singing sessions, this research has provided valuable insights into the role of group singing as a creative health intervention in nursing education.

From the beginning of the study, it was anticipated that group singing would provide measurable benefits to student nurses, particularly in areas of stress reduction, mood enhancement and the development of key interpersonal skills. These study expectations were largely met by the study's findings. The quantitative results demonstrated significant improvements in mood and relaxation and reductions in stress and worry following each session. Statistically significant improvements in both happiness and relaxation across Warrington and Chester further validate the hypothesis that group singing can positively impact student nurses' emotional states.

The statistically significant results found in hypothesis 1 and hypothesis 2, supported by Mann-Whitney U tests, mark a crucial turning point for contributing to the wider literature surrounding creative health and nursing education. It does, however, pose a limitation. The pre- and post-session data were treated as independent, though each participant's responses are linked. This may underestimate the true effect. Using a paired test, like the Wilcoxon signed rank, could give a more accurate measure of singing's impact on emotional states for future studies.

The qualitative feedback from students and staff reinforced these findings. Many students reported feeling more confident, less stressed and more closely connected and their audience after singing together. Staff members observed a clear transformation in students' emotional resilience, empathy and communication skills. This positivity, driven by the sessions, was particularly indisputable in the final performance on week 4, where students performed in front of service users in social care settings. The nurses' reactions to the service users' engagement with them

highlighted the importance of creating meaningful nurse-patient relationships and empathetic connections, which are at the centre of compassionate nursing care.

The integration of group singing into the nursing curriculum aligns with the creative health framework mentioned in Fig 1.0 which emphasises the importance of arts-based interventions in promoting well-being and enhancing professional development. This research adds to the growing body of literature that explores the potential of creative practices to support those working in the health care sector, both in hospitals and in our communities. The benefits include managing stress, building resilience and enhancing communication skills. By using a mixed methods approach, this study has proved that group singing is not only beneficial for mood and emotions, but it also nurtures softer skills for effective nursing such as teamwork, communication and emotional regulation (Feliciano *et al.*, 2022; Finnerty *et al.*, 2022).

A key learning is the importance and strength of experiential learning in shaping professional identity and building confidence. The use of Kolb's learning cycle and Mezirow's transformative learning theory provides a valuable framework for understanding how the singing experience contributed to personal growth and professional development. Students were able to reflect on their own experiences and understand their abilities both as individuals but also as part of a team. The reflective nature of the project allowed students to engage with the learning process on a deeper level, which aligns with the goals of nursing education.

Another finding of this study also highlights the potential for group singing to improve nurse-patient connections. As identified in the literature review, the act of singing together provides a sense of social cohesion and belonging, which is crucial for building trust and empathy and particularly relevant to healthcare settings. The service users' engagement in week 4 reinforces the idea that creative activities such as singing can bridge a gap between patients and nurses, backing up the theory that this can develop compassionate care and a better relationship between them (Babaei and Taleghani, 2019).

Limitations

Whilst this study has provided valuable insights, it also identified areas for further exploration. The study limitations, such as the lack of matched pre and post data for

individual participants and the challenges of measuring the long-term impacts of group singing, suggest that further research is required. It would be beneficial to explore how group singing might be integrated into the broader nursing curriculum and the impact it might have on other aspects of nursing practice, such as patient outcomes. Additional work could be done to assess the sustainability of the emotional and professional benefits of group singing beyond year one studies, and instead throughout the degree and beyond. My stance as an insider researcher is a potential bias that could be further addressed in a future study.

Final words

In conclusion, this study has successfully demonstrated that group singing is a transformative experience for student nurses, contributing to positive mood, emotional resilience, professional identity and the ability to connect with patients. It has been a personally and professionally rewarding experience for me and one that I hope to continue to build and investigate further alongside the University of Chester.

This study not only adds itself proudly to the body of literature, but it also offers practical recommendations and learnings for others who look to embed arts-based practices into healthcare training.

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Appendix A 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:	Jennifer Helen O'Hare			
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:	Institute of Management and Business Studies			
4	Campus:	Carmarthen			

5	E-mail address:	Jennieohare77@gmail.com
6	Contact Telephone Number:	07725517362
For students:		
7	Student Number:	2221188
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)	☒		

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	<i>[List any other relevant documents here]</i> ☐

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 Professional Learning Partnership (APLP)?	If YES then the permission question below does not need to be answered.	YES	☐	NO	☐
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:	Creative Health: Exploring the Transformative Impact of Group Singing on Student Nurses' Mental Health, Nurse-Patient Connection, and Its Relevance to Their Nursing Studies	
2	Proposed start date:	Jan 2025	Proposed end date: Aug 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 To explore the impact of group singing on student nurses. (this box should expand as you type)		
4	Research Question How does group singing support the mental health of student nurses, and how do they perceive its relevance to their studies and future nursing roles after personally experiencing it and observing audience reactions in a service user setting? (this box should expand as you type)		

5	Aim of the Study The aim of this study is to explore how group singing impacts student nurses' mental health, supports their nursing studies, and fosters connections with service users in a shared musical experience. Existing research highlights that singing reduces stress, improves mood, and builds essential nursing qualities such as resilience, empathy, and teamwork. However, the benefits of singing extend beyond participation; they also arise from sharing the experience with an audience. My hypothesis is that group singing not only enhances student nurses' well-being but also deepens their understanding of music's therapeutic role in fostering connection, particularly in settings where service users might rely on music to communicate. This shared experience—being seen and heard singing—offers insight into social prescribing, where non-medical interventions like music improve holistic patient care. Context Participants are first-year nursing students at the University of Chester. As part of their Creative Health placement, which educates students on social prescribing (non medical interventions as part of a care plan for patients and service users), they will form a temporary choir during a four-week programme. My research will be within an existing programme, and I will be working as a self-employed artist. The active involvement in singing—and observing service users' responses—will allow students to experience its mental, emotional, and physical benefits firsthand, while also highlighting music's role in building meaningful nurse-patient connections. This study will contribute to creative health pedagogy and nursing practice by exploring both personal and shared benefits of singing. There will be approx. 40 attendees per group, and I intend to study the impact across 2 campus sites. Approx 80 participants in total.
6	Objectives of Research Activity 1. Conduct a literature review investigating the relationship between, group singing, mental health and student nurses 2. Assess participants' mental health using scales to measure a baseline before singing and then again after singing 3. Facilitate inclusive singing sessions 4. Gather participant feedback 5. Analyse data 6. Interpret findings 7. Develop evidence-based recommendations 8. There are no other active studies examining the impact of group singing on student nurses. This study will therefore add new, valuable research to the field of "Singing for health". (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	<u>Mixed methods study</u> The students will attend a full day session with me once a week for 4 weeks. Weeks 1-3 are classroom based. Week 4 culminates the work in a performance setting within a social care setting e.g care home. It is hypothesised that nurses will further understand the impact of the benefits of group singing upon witnessing the reaction of an audience that is made up of patients and service users. Before my sessions, they will be given a launch day from the University. This will introduce all of the self-employed artists they meet across their 4 week course duration including different genres such as dance, art and my group singing During this launch day, students will complete a google forms document which I will have written and sent to the University prior to the launch day. This will contain information about my 4-week class specifically so that they know what to expect and what they will be singing. This form will include an opt in and opt out option for data capture specifically for my course and will make it clear that any questionnaires handed out are part of my Masters study, and separate from the University of Chester. I will also explain this information in person at the start of my session. This study uses a convergent parallel mixed methods design. This will allow me to collect qualitative and quantitative data simultaneously over the 4 weeks of my sessions with the nurses, providing me with a comprehensive understanding of my results. My research will include the following:- 1. Literature review: providing valuable insights into existing knowledge, refining research questions, informing methodology, and identifying key concepts. Quantitative Methods: 2. Surveys/Questionnaires: A pre session and post session paper-based questionnaire will be handed out to all participants on weeks 1-4 3. I will use my own self written Likert singing stressor score which will include a numeric indicator using the learnings from Clift's ("Wellbeing and choral singing scale"2001). I will use this model as an example alongside the Warwick Edinburgh Mental Well-being scale (WEMES 2007) to measure key mental health statistics. WEMES is a 14-item scale designed to assess mental well-being through positive statements about thoughts and feelings, with strong reliability and validity for research and clinical use. 4. Comparative Analysis: to compare the mental health indicators between students at different sites (Warrington and Chester) Qualitative Methods: 1. Interviews: On week 4, I will conduct individual conversations with study participants to gain in-depth insights into their experiences with group singing and how it relates to their mental health. Interviews allow participants to share their perspectives and personal stories, providing rich and contextually detailed data. I will conduct no more than 1 interview with approx. 5 students on the final week of their 4 week placement with me.
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	2. Field notes: I will record my observations, thoughts, and interpretations of events, behaviours, and interactions during the study. 3. Questionnaires. Open ended questions will be included. In addition, I will perform: - 1. Thematic Analysis: Analyse the qualitative data collected using thematic analysis, identifying, and categorising common themes and patterns. 2. Triangulation: Triangulate the quantitative and qualitative data by comparing and cross-referencing the findings from both methods. Triangulation enhances the validity and reliability of the results by confirming and corroborating patterns or discrepancies from data sets. 3. Interpretation and Discussion: Integrate the findings from both quantitative and qualitative analyses to offer a comprehensive interpretation of the research outcomes. Discuss the potential connections between group singing, mental health, and the mechanisms identified through qualitative insights. (this box should expand as you type)
	Location of research activity Identify all locations where research activity will take place.
8	University of Chester – Chester and Warrington Campus meeting rooms I have permission from the University of Chester for this. (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	NA (this box should expand as you type)

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. (this box should expand as you type)		

	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:		
	(this box should expand as you type)		

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)		
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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?	Approx 80 (this box should expand as you type)
11	Who will the participants be?	First year Nursing students at the University of Chester (this box should expand as you type)
12	How will you identify the participants?	The University provides the student list and will act as an intermediary. I will not receive a list of student names at all, and I do not capture this information at all. The University performs a register at the start and end of each day. I will be given the number of attendees to expect. Once I have received my launch day online form results, I will know how many

		students have opted in to help me with my study and will allow me to print and prepare my materials. (this box should expand as you type)
--	--	--

	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			
	(this box should expand as you type)			

	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			
	(this box should expand as you type)			

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?	<table border="1"> <tr> <td>Yes</td><td>☐</td></tr> <tr> <td>No</td><td>☒</td></tr> </table>	Yes	☐	No	☒
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 Participant: - Emotional distress – this might occur during singing. - Physical harm – this might occur during rehearsal warm up stretches.	<i>How will you mitigate the Risk to Participant</i> - Share songs and repertoire ahead of the sessions. Make it clear that participants can step out of the session at any point they feel unable to participate. If they feel able to continue then they can return to the room or they can speak to the University tutor if they feel they need to leave. The University sends a member of staff at the start, lunchtime and at the end of the day. Students will be made aware that this support exists. They can speak to me at any time with questions about singing – I will make them all aware of the break times and they can utilise these and therefore remain anonymous in front of their peer group. I will stress at the start of the sessions that not participating will not affect their nursing course in any way. - I will make it clear before any physical activity and clearly demonstrate all stretches before asking those participants who are fit and able to do so, to join in. I will also provide a low impact alternative at all points.				

	3. Transfer of personal data 4. Confusion of participant rights 5. Risk that filling in a paper questionnaire during session might reveal those who opted out of data collection	3. I will anonymise all data and remove all identifying details. 4. I will make it clear that I cannot carry out research without participant consent and that the research cannot start without their consent. They can withdraw at any time. I will not take an identifier from any student on any form at any time. 5. I will hand out form to all students and explain at the beginning and at the end of the course that if they have opted out they should leave the form blank. I will ask them all to leave the forms in a box at the entrance and exit of the room. This way the students anonymity is protected.
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	
	<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 Investigator: 1. Personal safety	How will you mitigate the Risk to Investigator: 1. Ensuring I have a nominated member of staff communication information from the University of Chester. I will have a member of staff at the beginning of the day and at the end of the day

	4. Risk of participants disrupting the session for other participants 5. Participants non attendance	member of staff allocated to me at the University or raising this to my tutor. I will use my own personal self-reflection time to manage any emotions and feelings that do not require any escalation. 4.As part of the existing University of Chester student guidelines, students are required to demonstrate professional behaviours. If this does not happen and the session is at risk from individual behaviour I will speak to the individual away from the rest of the group and make it clear they have the option to leave the session. I will also report the issue to the University of Chester staff. 5. Participants might not attend due to sickness or personal issues. I cannot control this however, the class size of 40 across 2 geographical sites, allows for some non-attendance to remain statistically significant. I will encourage attendance and I will also make it clear in my findings and analysis if there are instances for numbers dropping.
5	University/institutional risks For example: adverse publicity, financial loss, data protection	
	Risk to University: Data protection Adverse publicity	<i>How will you mitigate the Risk to University:</i> I will anonymise all data and will ensure nothing is publicly stored at any stage. 1. I will maintain transparent and open communication about the study's objectives, methods, and potential risks. 2. I will also obtain informed consent from all participants, ensuring they understand the study's purpose, potential risks, and benefits. Assure participants that their identities and personal information will be kept confidential to protect their privacy. 3. I will be cautious about what is shared on social media regarding the study.

		Monitor and manage online discussions and address misinformation promptly. 4. I will continuously monitor the study's progress, media coverage, and public perception. I will be prepared to address any misconceptions or inaccuracies that may arise.
6	Environmental risks For example: accidental spillage of pollutants, damage to local ecosystems	
	Risk to the environment: NA <i>(this box should expand as you type)</i>	How you will mitigate the risk to environment: <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.			

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?
	I will set up a research email address for participants to be able to use should they desire. <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.
	All participants are briefed by myself firstly within the online questionnaire which the University sends out in their own internal launch day and then at the start of my first session with them. It will be clear that the information gathered is by me and for my study. Everyone is asked to complete an online questionnaire on the launch day from the University. This Questionnaire will include an opt in and opt option. It will be very clear to participants that if they continue to the form they consent. All questionnaires are anonymised. All interviewees will be given a pseudonym as an identifier <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.
	During sessions I will use anonymised forms and I will not record any information containing individuals at any point. Pseudonym used for interviews. At no point during any of the sessions will any reference be made towards those taking part or not taking part in my study. I will maintain confidentiality during the sessions. All participants will be told to collect a paper questionnaire at the start and at the end of each day. There will be a box available at the entrance and exit to the room and participants will be asked to post their forms in there thus removing the need for them to pass them to me (which clearly identifies them as participating/ not participating) <i>(this box should expand as you type)</i>

SECTION J: Data Protection and Storage

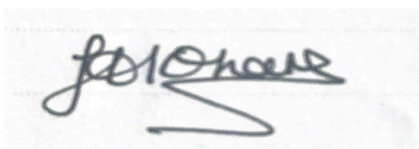
	Does the research activity involve personal data (as defined by the General Data Protection Regulation 2016 “GDPR” and the Data Protection Act 2018 “DPA”)?	YES	NO
1	“Personal data” means any information relating to an identified or identifiable natural person (‘data subject’). An identifiable natural 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	Consent forms will be collected for the research study to follow the ethical guidelines of the University and to ensure all participants are fully aware of the processes for the study engagement. <i>(this box should expand as you type)</i>		
	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	<i>(this box should expand as you type)</i>		
	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 kept in password protected storage on my Office 365 system which will not be shared. All participants will be given a unique identifier to ensure confidentiality and this list will be kept securely in the password protected folder. (this box should expand as you type)		

	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):		
	After completing my study I will share the findings with the University of Chester in the form of graphs and presentations. I will not share any of the raw data. (this box should expand as you type)		
22	List all who will have access to the data generated by the research activity:		
	Jennifer O'Hare and my supervisor, David Cane. (this box should expand as you type)		
23	List who will have control of, and act as custodian(s) for, data generated by the research activity:		
	Jennifer O'Hare		

	<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 will be password protected and sorted for no longer than 12 months All data will be kept in password protected storage on my office 365 system which will not be shared. All participants will be given a unique identifier to ensure confidentiality and this list will be kept securely in the password protected folder. <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>		
	no <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: 7/11/24

For STUDENT Submissions:

2	Director of Studies/Supervisor:	Laura James	Date: 27.1.25
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.

Appendix B Staff Survey

SurveyCreative Health Choir 2025 Staff

The information provided on this form will help facilitate an understanding of group singing for Student nurses and the impact that you believe it has on both their own mental health, studies and future nursing careers. The information gathered is part of my MA in vocal pedagogy (Voice Study Centre and University of Wales Trinity St David). For more information you can contact me Jennifer O'Hare on Jennieohare77@gmail.com. If you prefer to speak to my research supervisor David Cane, his email address is david@voicestudycentre.com.

Please do not identify yourself on this form. This is not mandatory to complete and the form is anonymous.

You have been sent this form because you have either attended a performance on week 4 or you have been involved in a choir session.

By typing "I agree" in the first question you are agreeing to participate voluntarily.

Please Type "I agree" before continuing

1. Impact upon the student nurses

Based on your observations, what impact—if any—has participation in the Student Nurses Choir had on student nurses' wellbeing and mental health?

What, if any, skills or qualities do you think student nurses may have developed through their involvement in the choir? (Select all that apply)

No noticeable impact

Increased confidence in communication

Improved teamwork and collaboration

Greater empathy and emotional awareness

Stress management techniques

Increased resilience

Other (please specify)

2. Impact on Service Users (Audience in Care Settings)

If you attended a choir performance in a care setting, what responses—if any—did you notice in residents or service users?

From your perspective, do you think music and creative activities like group singing could play a role in improving the wellbeing of people in healthcare settings? Why or why not?

3. Future Applications in Nursing Careers

Thinking back to your own experiences in nursing or healthcare, do you believe creative health activities—such as group singing—could have been beneficial in your training or professional practice? Why or why not?

Nursing requires both technical expertise and human connection. Do you think group singing helps develop qualities such as active listening, emotional awareness, or teamwork? Please explain.

4. Your own emotions and observations

From your own perspective, how did watching the performance affect your mood or emotions? Did it change your opinion on the value of group singing in healthcare or education?

Based on your observations, did you notice any changes in the students during or after the performance (e.g., confidence, engagement, teamwork)? If so, what stood out to you?

Appendix C Creative Health Week 4 Feedback

To be filled in after performance on week 4

* Indicates required question

Can you tell me about your performance today (where was it, who were the service users)?*

How would you describe your thoughts and feelings about the first three weeks of this placement, particularly the experience of singing together as a group in preparation for the performance?*

Can you describe your feelings and thoughts about this placement now that you have performed together on week 4. What are the differences in comparison to weeks 1-3?*

How did singing in a group make you feel today?*

Can you describe the reactions of the service users to your performance. Did you notice any changes in how service users interacted with or responded to the group? Please describe.

How did the reactions of the service users to your performance make you feel?

How did performing with your cohort impact your sense of community or teamwork?

Reflecting on the performance, do you feel this experience helped you develop any skills relevant to nursing? If yes, please provide examples

Do you have any other comments or feedback? Is there anything you think could improve this experience for future participants?*

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Appendix D

This form isn't accepting responses.

Creative Health 2025 Before session

Please do not fill in your name or identify yourself on this form.

It is not mandatory. If you do not wish to complete this form, please hand it in, leaving the information empty.

* Indicates required question

Please indicate your campus

Chester

Warrington

How would you describe your general mood before this session*

How happy are you feeling right now?*

Very unhappy

- 1
- 2
- 3
- 4
- 5

Very happy

How stressed are you feeling right now?*

Not stressed at all

- 1
- 2
- 3
- 4
- 5

Very stressed

How worried are you feeling right now?*

Not worried at all

- 1
- 2
- 3
- 4
- 5

Very worried

How relaxed are you feeling right now?*

Not relaxed at all

- 1
- 2
- 3
- 4
- 5

Very relaxed

Do you think singing together as a group will change your mood?*

- Yes
- No

How much are you looking forward to this session?

Not at all

- 1
- 2
- 3
- 4
- 5

Very much

How connected do you feel to the group before this session?

Not connected at all

- 1
- 2
- 3
- 4
- 5

Very connected

How energetic do you feel right now?

Very low energy

- 1
- 2
- 3
- 4
- 5

Very high energy

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Forms

Appendix E

Choir Creative Health 2025 After-session

Please do not fill in your name or identify yourself on this form. It is not mandatory. If you do not wish to complete the form, please hand it in, leaving the information empty.

* Indicates required question

Please indicate your campus

Chester
Warrington

How would you describe your general mood after this session*

How happy are you feeling right now?*

Very unhappy

- 1
- 2
- 3
- 4
- 5

Very happy

How stressed are you after this session?*

Not stressed at all

- 1
- 2
- 3
- 4
- 5

Very stressed

How worried are you feeling right now?*

Not at all worried

- 1
- 2
- 3
- 4
- 5

Extremely relaxed

How relaxed are you feeling right now?*

Not at all relaxed

- 1
- 2

3
4
5

Very relaxed

Did singing together change your mood*

Yes
No

How connected to the group do you feel after this session?*

Not at all connected

1
2
3
4
5

Very connected

How energetic do you feel right now?

Very low energy

1
2
3
4
5

Very high energy

How much of this session improved skills like teamwork or empathy?

Not at all

1
2
3
4
5

Very much

Did anything during this session surprise you or change your perspective?

Can you see ways that what you experienced in this session could be applied to your nursing practice?

Never submit passwords through Google Form



All thanks to Jen O'Hare,
from Making Maestros



They'll be singing "Try
Everything" with Makaton,
"Funga Alafia" and "How
far I'll Go"

Student nurses from Chester
University are going out to sing to
people with Making Maestros on
Thursday 27th at;
Chester Lodge 10:30am
Stonehouse 1:00pm

Appendix G

