Quality-of-Life Benefits of Group Singing for People with Parkinson’s Disease

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Introduction

Parkinson’s disease (PD) is a neurodegenerative disease that affects 2% of the population above the age of 65. Motor manifestations of the disease include body rigidity, slowed movement, tremor, and decreased speech intelligibility (Visser et al., 2009). PD is also associated with a decrease in health-related quality of life (QoL).

Prior research has suggested that choral singing might be associated with improvements in quality of life in individuals with PD (Abell et al., 2017).

Based on a review of the current literature, the objectives of this study are:
1. To investigate QoL associated with choral singing in individuals with mild-moderate stage PD.
2. To identify emotional, social, personality, and vocal traits that may predict benefits of choral singing among participants.

Methods

In preparation for this study, a choir was developed at the University of Delaware (UD), called “Neuro Notes,” for adults with PD. The choir was facilitated by graduate students and faculty from the UD CSCD and choral conducting programs. Five participants (mean age of 69.4 yr.) with a formal diagnosis of mild-moderate PD were included in this research study. Choir rehearsals occurred once a week for 12 weeks. All participants were required to attend a minimum of 9 out of 12 rehearsals. Surveys and Questionnaires were administered prior to the first practice and following the group’s final practice.

Results

Table 1. Correlation between z-score changes for each domain of PDQ-39 to z-score changes of other surveys administered

- NeuroQoL Positive Affect
- NeuroQoL SWSRA
- PROMIS Social Isolation short form (SI)
- Voice Handicap Index (VHI)
- Parkinson’s Disease Questionnaire (PDQ-39)
- Hearing Screening
- The Big Five Inventory (BFI) Test
- Intake form

Raw scores from all surveys were calculated and converted to z scores to determine how far above or below each raw score lay from the typical population mean (Figures 1-6). To determine the significance of scores as they relate to multiple subtests, correlations between measures were calculated to measure the correlation coefficient (r). To calculate this, the change in z-score from pre- to post-test was calculated for each test administered (Table 1). Following this, the change in z-scores for each test were correlated to the change in z-scores for each domain of the PDQ-39 (Table 2).

Discussion

The 8 domains of the PDQ-39 are mobility (M), activities of daily living (ADL), emotional well-being (EWB), stigma (S), social support (SS), cognition (COG), communication (COMM), and bodily discomfort (BD) (Jenkinson et al., 1997).

Correlation results from the PDQ-39 to the other dependent surveys show the only subtest found to consistently correlate with PDQ-39 is the NeuroQol SWSRA. Due to this, a change in feelings of social isolation may be negatively associated with a change in any parameter measured by the PDQ-39. Also, a strong positive correlation exists between the NeuroQol SWSRA and domain of SS on the PDQ-39. This shows that change associated with SWSRA may be associated with changes in feelings of social support. Correlations between domains of the PDQ-39 and BFI show extraversion demonstrated strong negative correlation with the change in SS on the PDQ-39. This shows that participants with increased extraversion may have had decreased social support.

Limitations of the study included a small sample size. A larger sample size and participant awareness that group singing may lead to improved QoL before joining the study. Also, only participant one, two and three attended the minimum of nine out of 12 rehearsals to remain in the study.

Conclusion

This study used a one group pre-test and post-test design. In this pre-experimental design type, neither variables are manipulated. Due to the pre-experimental nature of this study, only weak conclusions can be drawn.

The main take-aways of this study are:
1. Increased social support from the group choir setting may improve QoL by positively influencing a person’s satisfaction with their social roles and activities.
2. Individuals who are likely to join a choir may possess personality traits including agreeableness and openness.
3. Participants with increased agreeableness tended to be more mobile.
4. More systematic research with a larger sample size is needed to strengthen conclusions.

References

