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THE EFFECTS OF MUSICAL TRAINING ON THE WELL-BEING
OF OLDER ADULTS

By

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Abstract

Objective. The current study sought to examine the effects of early musical training on the quality of life of older adults. Method. 58 older adults, at least 65 years old, were divided into three groups based on their levels of musicianship: non-musicians, low-activity musicians (less than ten years of lessons), and high-activity musicians (more than ten years of lessons). Self-report questionnaires were given to determine musical training and other factors such as physical activities. Quality of life was measured by the Quality of Life-AD, a 13-item survey. Results. The differences between level of musicianship and quality of life were statistically significant. Demographic factors such as sex, age, and education did not significantly affect the results.

Conclusions. The results of this study supported the notion that the more musical training yields higher scores on quality of life measures. This is consistent with most previous research.

Keywords: quality of life, musicianship, active aging

1.1 Introduction
Medical practitioners have long focused on ways to ensure successful aging among the elderly and how to improve their quality of life. Recently, more attention has been given to the concept of active aging. According to the World Health Organization (WHO), active aging is “the process of optimizing opportunities for health, participation and security in order to enhance quality of life as people age” (WHO, 2002). One of the major ways to participate in active aging is by engaging in activities, including leisure, physical, cultural, or social. Examples of these kinds of activities include attending church, a water aerobics class or a city festival, or participating in a music group. A study of more than 700 older adults found that participants with higher activity levels had better cognitive function, self-rated health, and functional ability (Fernández-Mayoralas, Rojo-Pérez, Martínez-Martín, Prieto-Flores, Rodríguez-Blázquez, Martín-García, & Forjaz, 2015). These factors ultimately lead to a higher quality of life.

Most older adults seek a high quality of life. One of the early theories of aging is Cumming and Henry’s disengagement theory. It has fallen out of favor because it focuses on how aging is about withdrawing from relationships and curbing participation in activities in order to prepare for death. On the contrary, Havighurst’s activity theory of aging provided a much more positive approach to aging. Partaking in various activities, the theory argues, helps to optimize a person’s chances of being healthy and enjoying a higher quality of life as he or she moves throughout the aging process.

Not every adult can continue to participate in every activity throughout life. For example, someone that participates on sports teams would eventually need to modify his or her involvement because they wouldn’t physically be able to continue. This approach to aging is known as Baltes’ theory of selection, optimization, and compensation. Selection refers to an adjustment in an individual’s expectations and goals, optimization refers to the participation in
behaviors and activities that maximize their new choices, and compensation refers the use of the newfound focuses to make up for the activities or goals that were given up (Baltes & Baltes, 2008). One activity that can be continued throughout a person’s entire life is involvement with music. Whether be vocal or instrumental, few limitations would cause this activity to be modified. Music can also be a source of leisure, social, and cultural activities.

Involvement with music is one of the many factors scholars investigate in order to point to its potential physical and cognitive benefits throughout the aging process. Even simply participating in a musical group, with or without prior musical training or experience, can be very beneficial. One study examined a group of 166 healthy adults, ages 65 and older, and randomly assigned them one of two groups: intervention, participation in a choir, or comparison, continuing with their normal activities. At the end of the 12-month study, the intervention group reported “a higher overall rating of physical health, fewer doctor visits, less medication use, fewer instances of falls, and fewer other health problems” as well as “better morale and less loneliness” compared to the comparison group (Cohen, Perlstein, Chapline, Kelly, Firth, & Simmens, 2006). Prior musical experience was not a requirement for this study, so these adults simply added music participation to their lives, and their lives were positively affected by it.

Music in all its varieties can be valuable to aging adults when looking at improving their quality of life. Research in Spain looked at musical participation in three different ways: involvement in weekly choir, weekly music appreciation classes, and weekly preventative music-therapy sessions. The study concluded that all three programs “contributed to making new friends, acquiring new knowledge, feeling more useful, and feeling satisfied and optimistic in life” (Solé, Mercadal-Brotons, Gallego, & Riera, 2010). All of these outcomes, which resulted from participation in music, can lead to a higher quality of life.
Although participating in musical activities has positive effects on perception of quality of life, research shows more benefits accrue if a person has had musical training throughout his or her life. A study of 64 adults, with the majority being between ages 61-75, 95% of whom “reported receiving instrumental instructions at some point in their lives… [and] 83% had played their instruments for over ten years” (White, 2016), revealed that the participants were actively partaking in either the community choir, band, or orchestra. Of the surveys that were completed, some of the highest scored benefits of musical involvement were ‘My musical activity affirms an important part of my identity’ and ‘My musical activity gives meaning to my life’ (White, 2016).

Although measuring quality of life depends on how the person is feeling and self-perceives his or her situation, many quantitative factors influence a person’s quality of life. Formal musical training has been linked to higher cognitive abilities such as visual-motor coordination, visual scanning ability, visual processing speed, and spatial memory. A study conducted in Singapore compared 24 musicians and 30 non-musicians on multiple cognitive. The musicians were classified as having formal musical training for five years or more beginning at an average of eight years old. The results of this study indicate that formal music training, specifically exercises such as sight reading, positively impacts working memory (Suárez, Elangovan, & Au, 2016). This study concluded that prior musical training can positively impact cognitive function, which in turn can lead to a higher quality of life than that of non-musicians.

Musical training can also impact a person’s decision-making ability. One study divided 154 participants into three groups: early musical training (beginning before the age of 7), late musical training (beginning after the age of 8), and no musical training. Through using the Iowa Gambling Task, it was determined that the group with early musical training performed better in decision-making under ambiguity and under risk than the other two groups (Hou, He, Chen, &
Dong, 2017). Decision-making can affect a person’s quality of life, especially if a person has poor decision-making skills. It has the ability to impact a person’s social and financial situations, as well as other parts of their life.

1.2 Current Study

The current study examined the impact of formal musical training on the quality of life of older adults. The rationale for this study is that past research surrounding these topics either looked at non-musicians participating in musical activities solely for the purpose of the study, or improved quality of life was only assumed to be improved based off other measures instead of measuring it directly. Maintaining the design used in previous research, participants of this study were grouped according to high-activity (more than ten years of private lessons), low-activity (less than ten years of private lessons), or non-musicians. I hypothesized that participants in the high-activity musician group will yield higher results on the Quality of Life-AD than those in the low-activity or non-musician group.

2.1 Material and Methods

2.1.1 Recruitment and Consent

Dr. Jessica Strong and Dr. Benjamin Mast of the University of Louisville conducted the recruitment and consent aspects of this study. The study was approved by the University of Louisville’s IRB and was consistent with the Helsinki Declaration for human subjects research. Recruitment for the participants with musical training was completed by using fliers in music stores, music departments of local universities, musician unions, and community music programs; non-musicians were recruited through senior centers, religious organizations, and spouses of musicians. Representatives from the research staff were requested to give
presentations about the study to certain organizations such as senior or community center events, community music programs rehearsals, and religious institution meetings. Privacy rights were reviewed, and all participants completed independent written informed consent. After this step, participants’ data was coded/de-identified and stored, per what was stated in the consent. Compensation for participation in this study was the chance to win one of six $50 gift cards in a raffle that took place at the conclusion of the study.

2.1.2 Sample

All potential subjects were screened over the phone for living situation, visual or hearing impairments, presence of mood or neurological disorders, age, and history of stroke. In order to avoid discrepancies in the results, vocalists without any instrumental music training were excluded. Fifty-eight of the original 74 people who were recruited met all criteria and were placed into three groups according to musicianship, high-activity, low-activity, and non-musicians. Individuals were removed from the sample for having a positive depression screen, history of stroke, diagnosis of Parkinson’s disease, if they were vocalists with no additional instrumental training, illiteracy, and if they were less than 65 years old. Everyone completed the evaluation and four participants did not complete one test as a result to fatigue or frustration.

2.1.3 Measures

The Quality of Life-AD Measure was used to quantify the participants’ perception of their quality of life (Logsdon, Gibbons, McCurry, & Teri, 2002). The Quality of Life AD has thirteen questions that participants respond to. They include questions such as “How do you feel about your physical health?” and “How do you feel about your current situation with money?”, to which they circle one of four responses: Poor (scored as a 1), Fair (scored as a 2), Good
(scored as a 3), or Excellent (scored as a 4) (Logsdon et al., 1999). Participants’ final scores were calculated by adding the numerical value of their answers together. The lowest and highest possible sums were 13 and 52, respectively. Participants with musical experience answered surveys about their musical training, such as instrument(s) played, beginning age, ensemble involvements (jazz band, orchestra, band), number of years in private lessons, and the degree, if at all, they still participate in music activities. Participants were then separated into the groups described in section 1.2 Current Study based on their responses to years in private lessons.

2.1.3 Procedures

Participants were given a choice of either completing the evaluation in offices on campus or having a research assistant come to their home. All tests and questionnaires were administered with paper and pencil. To avoid biases, the order of questionnaires and tests were randomized per each participant and adhered to administrative protocol.

3.1 Results

An assessment of the mean values of the QOL-AD within the three comparison groups (non-musicians, low-activity musicians, and high-activity musicians) yielded the following results; Non-musicians had a mean score of 39.00 (N = 13, SD = 6.03), low-activity musicians had a mean score of 42.50 (N = 22, SD = 6.31), and high-activity musicians had a mean score of 44.26 (N = 23, SD = 4.63) (See Figure 1). The group with the highest mean score on the QOL-AD was the high-activity musicians, and the group with the lowest mean score was the non-musicians. The mean of current hours playing music per week was also calculated. High-activity musicians played a mean of 15.06 hours per week (SD = 11.27) and low-activity musicians played a mean of 3.15 hours per week (SD = 3.27).
The Pearson r correlation test and a one-way ANOVA were used to determine if there is a difference across the three comparison groups, as well as demographic measures, that is statistically significant. Quality of life did not differ significantly between males and females ($F = .016$, $df = 57$, $p = .901$). The results of the QOL-AD and level of education ($r = .16$, $p = .23$) were positively correlated, but not significant. Age and the results of the QOL-AD, although negatively correlated ($r = -.13$, $p = .33$), were also not significant.

The results of the QOL-AD and the different groups of musicians produced a significant result ($F = 4.25$, $df = 57$, $p = .020$). A Post Hoc test was completed to determine if there was a statistically significant difference between the three comparison groups. There was a significant difference between non-musicians and the low-activity group ($p = .028$) as well as the high-activity group ($p = .006$). There was not a significant difference between low-activity and high-activity ($p = .551$)

4.1 Discussion
The goal of the current study was to investigate the significance of musical training on the well-being of older adults. While previous studies focused their research on the mental and physical advantages of participating in musical activities as well as having some music education, they failed to look solely at the effects musical training has on quality of life. It was hypothesized that participants in the high-activity musician group will yield higher results on the Quality of Life-AD than those in the low-activity or non-musician group. This hypothesis was supported by results of the current study. The main finding was that members of the high-activity musician group on average scored higher on the QOL-AD than those in the low-activity group and the non-musician group. Secondary to that, members of the low-activity group also scored higher than the non-musician group.

These results are consistent with prior research. Previous studies have concluded that musical training positively impacts cognitive abilities, decision-making skills, as well as self-perceived wellness. Significant results that support the idea that musical training improves quality of life in older adults fits in with what has been found in the past.

This study calls into question the reasoning behind musical training contributing to a better quality of life. If listening to music can have a way of eliciting certain emotions and thoughts, it is possible that participating in the creation of music may have an even stronger impact on how a person is feeling. It is also possible that a higher quality of life could be connected to improved cognitive function. A person who feels more in control of his or her decisions, feels his or her memory still works well, and/or is experiencing other positive cognitive effects like the ones mentioned in the introduction, they might also be feeling a sense of a higher quality of life.

4.2 Limitations
A few limitations should be considered when looking at this study. The most significant limitation is the possibility of confounding variables. Even though it was found that musical training significantly impacts the QOL-AD, factors other than musical training could possibly account for some results. That might include overall temperament (i.e. pessimist, optimist, etc…) or recent life events (i.e. death of friend, birth of family member, etc…), are affecting the participants’ scores. Even though these are unforeseeable limitations, their potential influence must be noted.

The fact that vocalists were removed from the sample and only instrumental musicians participated also limited the impacts of the study. Since there are only two types of musicians (vocalists and instrumentalists), not including vocal musicians limits the external validity. In turn, this makes the results less applicable to the general population of musicians. Vocalists were excluded in order to control for the type of musical training affecting the quality of life, however. For future research, it would be interesting to see if a significant difference exists between the effects of vocal and instrumental education.

This study also brought up the potential impact that active music participation could have on quality of life. Participants in both the low-activity and high-activity groups continue to play music, so it is possible that this, instead of solely musical training, could be influencing how they perceive their quality of life. A way this can be controlled for would be to seek out participants who have musical training but have stopped their participation in musical activities.

The final limitation is with the demographics of the sample used. This is a common limitation for most studies. For example, in the current study, all the participants, except for two, identified themselves as Caucasian. Also, the level of education is also very similar; forty-five of the fifty-eight participants also at least have a bachelor’s degree. Like with the lack of vocalists,
the fact that the demographics are so similar affect the external validity of the results. A more diverse group of participants would help to make the results more universal.

4.3 Future Directions

This study further supports the idea that musical training has significant positive effects later in life, as previously supported by other studies. Expanding this research to include vocal musicians, especially considering the studies that have positive outcomes from participation in choirs and other vocal music settings, is the next step to making these results more worldwide.

The possibilities of research on music and all its benefits are endless. People are beginning to think about their aging earlier in their lives and beginning musical training is something that can significantly impact their quality of life. In a world where music education, along with other forms of art education, is under constant threat of being defunded and dismantled, arguments for saving these programs will be stronger with more solid evidence detailing the long-term benefits of music.


