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Singing and Well-Being Indicators

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Abstract

Previous studies have indicated that there are positive effects of music and singing on well-being in adults. The aim of our study was to examine the associations between singing characteristics and well-being indicators (positive affect, negative affect and life satisfaction). The study participants were 221 people (75.1% female) between 18 and 70 years (M = 31.94, SD = 12.89) who were at the time actively involved in any kind of singing activities. Singing characteristics, namely, frequency of singing, singing alone or with others and importance of singing were measured by a questionnaire designed for the purpose of this research. Croatian adaptation of the shortened form of The Positive and Negative Affect Schedule (PANAS; Watson & Clark, 1994) was used for measuring positive and negative affect, while The Satisfaction with Life Scale (SWLS; Diener et al., 1985) was used for general life satisfaction. We examined the associations between singing characteristics and well-being indicators using correlational and regression analyses. Results of both analyses showed that people who considered singing highly important had higher life satisfaction, and that singing with others was associated with less negative affect. However, these associations were small in size, explaining 2.7% and 6.3% of well-being variance after controlling for age. In line with previous research, when there are significant effects of singing on well-being, they are in direction that singing is associated with higher well-being.

Keywords: singing, positive affect, negative affect, life satisfaction

Introduction

There is an increasing body of empirical and experimental studies demonstrating that engaging in musical activity can have a positive impact on well-being in a diverse range of contexts across the lifespan (Welch et al., 2020). One of the musical activities that has received a lot of research attention is singing. This is not surprising since singing as a music activity is available to the majority of people from diverse cultural, demographic, and political backgrounds in different forms, such as everyday singing, group singing, karaoke singing, solo singing, and singing education (Kang et al., 2018). Singing is also an activity that people are in contact

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with from an early age since it is embedded in social and educational contexts such as religious services and preschool educational programs.

Different reviews of the literature have indicated that it is difficult to summarize findings on the association between singing and well-being due to the fact that a variety of self-report measures have been used to measure well-being (Daykin et al., 2018; Dingle et al., 2019). In addition, subjective well-being (SWB) is a multi-faceted concept including a cognitive component or general and domain life satisfaction evaluation, and an affective component or the relative ratio of positive and negative emotions in one's life (Diener et al., 1999). SWB can be conceptualized as three separate components, a hierarchical construct, a causal system and a composite construct (Busseri & Sadava, 2011; Busseri, 2015). A meta-analysis of the associations between positive affect, negative affect, and life satisfaction has shown support for a hierarchical structural conceptualization of SWB and indicated that future studies should examine the associations at both levels (Busseri, 2018). This meta-analysis only included the studies that used the Scale of Positive and Negative Experiences (SPANE; Diener et al., 2009, 2010) to measure positive and negative emotions, but not studies using other measures such as the Positive and Negative Affect Scale (PANAS; Watson et al., 1988). Studies have also indicated that age might be an important factor for SWB (López Ulloa et al., 2013).

The review of the literature indicated that studies have mainly examined the association between singing and some of the SWB components, with some studies including only a measure of a cognitive component, while others included a measure of an affective component of SWB. Wise et al.'s (1992) examined life satisfaction in a retirement community between 47 choral singers and 49 non-singers and found no differences. A population-based study from Norway showed participating in music and singing activities was significantly associated with higher life satisfaction, but only for women (Cuypers et al., 2011). Stewart and Lonsdale (2016) compared choral singing to two other relevant leisure activities, solo singing and playing a team sport, and found that there was no difference in overall life satisfaction between the three groups. Ardahan (2016) compared life satisfaction of choir singers and non-choir singers and found higher life satisfaction in choir singers. Lonsdale and Day (2021) compared well-being of choral singers to those who took part in five other activities: solo singers, band/orchestra members, solo musicians, team sports players, and solo sports players. They found no differences between the groups on a measure of happiness and life satisfaction. Radočaj-Jerković (2022) collected data on life satisfaction from 210 choir singers and found no differences in life satisfaction regarding years of participation in singing.

As for affective component of SWB, Grape et al. (2003) compared emotional states measured with visual analogue scales of opposite emotions in 8 professional and 8 amateur singers before and after a singing lesson. The amateurs reported increased joy after the singing lesson, while both groups reported more energy and more relaxation after the lesson. Taking the observations before and after the lesson

together, the amateurs reported more positive arousal/enjoyment/positive emotions than the professionals. Studies examining positive and negative affect before and after singing showed that positive affect increased after singing, while negative affect decreased (Kreutz et al., 2004; Weinstein et al., 2016). Dingle et al. (2017) study included PANAS measure for 23 choir members during the day they had a choir rehearsal. Results showed that there was a significant increase in positive emotions during the activity which was short-lived and a decrease in negative emotions which lasted until the evening.

Two studies collected data on both life satisfaction and positive and negative affect from older adults from either a singing intervention group or a control group (Galinha et al., 2022; Pires et al., 2018). Both studies collected data prior to the singing group program, during or after the singing group program and at follow-up. One study found that participating in a singing group program had an effect on negative affect which significantly decreased in an intervention group, but this effect was not sustained at follow-up (Pires et al., 2018), while the results in the other study indicated that participating in a singing group program had an effect on positive affect which increased in an intervention group (Galinha et al., 2022). To summarize, results were not consistent across studies, most studies examined either cognitive or affective component of SWB, compared singers with non-singers, sometimes choir singers with solo singers, and two studies that included both cognitive and affective component of SWB were intervention studies with older adults as participants. When there were significant findings, they indicated that singing is associated with higher well-being.

To further understand the association between singing and well-being indicators this correlational study examined singing characteristics, life satisfaction, positive and negative affect in a sample of adult singers participating in different forms of amateur singing. The strengths of this study are the inclusion of both cognitive and affective component of SWB, as well as the use of heterogeneous sample in terms of age, education, music education and different singing characteristics. It was expected that higher singing frequency, singing with others, and the greater importance of singing will be associated with singers being more satisfied with their lives, and experiencing more positive and less negative affect.

Method

Participants

Participants in this study were adults participating in any kind of amateur singing activity at the time of data collection. The total sample included 221 participants (75.1% female, 24.4% male and one person (0.5%) preferred not to say) from 18 to 70 years (M = 31.94, SD = 12.89). The sample included participants with

diverse musical education; 21.3% had completed primary music school, 24.0% had non-formal music education, 18.1% had no music education, 10.4% had completed secondary music school, 7.7% graduated at the Academy of Music, 6.8% were current students of Academy of Music, 8.6% attended primary music school without finishing and 3.1% had some other form of short music education.

Measures

Singing characteristics. We examined the following singing characteristics: singing frequency, whether the participants were singing alone or with others, and the importance of singing. Singing frequency was measured with one item asking participants how often they participate in singing activities and the response was provided on a 5-point scale (1 – *once a month*, 2 – *once in two weeks*, 3 – *once a week*, 4 – *2-3 times a week*, 5 – *every day*). The form of singing was measured with one question "In which form do you usually sing?". Participants could choose between two answers coded as 1(*alone*) or 2 (*with other people*). The importance of singing was measured with one item asking participants how important is singing in their lives. The response scale ranged from 1 (*not important at all*) to 7 (*highly important*). Due to the fact that most participants (52.9%) stated that singing was highly important to them, we coded responses to this question into two options: 0 (*singing not highly important*) and 1 (*singing highly important*).

Subjective well-being. In order to examine both cognitive and affective components of SWB, we used PANAS and The Satisfaction with Life Scale (SWLS). The Croatian adaptation of a shortened form of *The Positive and Negative Affect Schedule* PANAS-X (Watson & Clark, 1994) was used. It has two 8-item scales to measure both positive (PA) and negative (NA) affect like two separate, independent dimensions (Križanić, 2013). This version with two 8-item scales was chosen because it has been shown in several studies that for these items no understanding or interpretation problems were found (Križanić et al., 2014). Every item is a word that describes one emotion. It is a self-report questionnaire and each item is rated on a 7-point scale of 1 (*not at all*) to 7 (*very much*). Participants had to mark a degree of agreement in which emotion is describing their affect in the last seven days. The final result is a sum of answers for PA and NA separately. Cronbach's α reliability in this study was .90 for PA and .89 for NA. These reliability coefficients are consistent with previous studies (e.g, Križanić et al., 2014). *The Satisfaction with Life Scale* (SWLS; Diener et al., 1985) is a measure of cognitive component of SWB. It is a 5-item, self-report questionnaire and each item is rated on a 7-point Likert-type scale from 1 (*strongly disagree*) to 7 (*strongly agree*). The total score is a sum of all items with higher scores indicating higher life satisfaction. Cronbach's α reliability in this study was .76, which is similar to reliability from previous studies (Diener et al.,1985; Lauri Korajlija et al., 2019).

Procedure

Data was collected online, from 24th of June to 11th of July 2021 using *Google Forms* and participants were recruited from social networks and various online groups. Although group rehearsals were not possible for a few months before collecting the data due to COVID restrictions, group rehearsals were possible at the time of the data collection.

Results

Singing characteristics in our sample are presented in Table 1. Our participants were singing mostly once in two weeks (47.1%), followed by once a month (25.3%), once a week (18.6%), while only 6.3% were singing every day and 2.7% 2-3 times a week. Majority of participants (79.2%) were singing with other people, and singing was highly important to 52.9% of them.

Table 1

Descriptive Statistics for Singing Characteristics (N = 221)

Singing characteristic	*n* (%)
Frequency	
Once a month	56 (25.3%)
Once in two weeks	104 (47.1%)
Once a week	41 (18.6%)
2-3 times a week	6 (2.7%)
Everyday	14 (6.3%)
Form	
Solo	46 (20.8%)
With other people	175 (79.2%)
Importance	
Not highly important	104 (47.1%)
Highly important	117 (52.9%)

Note. n = number of participants.

Descriptive statistics for SWB indicators and correlations with singing characteristics are presented in Table 2. As can be seen from Table 2, participants had higher mean for PA and SWLS than for NA. Skewness and kurtosis values lower than ±1 indicate that distributions can be considered normal. We hypothesized that higher singing frequency, singing with others, and a greater importance of singing will be associated with singers being more satisfied with their lives, and experiencing more positive and less negative affect. Results showed that singing frequency (r = -.16, p = .021) and singing with others (r = -.20, p = .002) were significantly

negatively associated with NA indicating that participants who were singing more often and with others tend to experience less negative affect. The importance of singing was significantly associated with PA ($r = .16$, $p = .018$) and SWLS ($r = .14$, $p = .040$), indicating that people who stated that singing is highly important for them tend to feel more positive affect and higher life satisfaction in everyday life than people not indicating that singing is highly important to them. All significant correlations were small in size.

Table 2

Descriptive Statistics for SWB Indicators and Correlations with Singing Characteristics (N = 221)

SWB indicator	*M*	*SD*	Range	α	*S*	*K*	Frequency	Form	Importance
PA	4.55	1.30	1.38-7.00	.90	-0.57	-0.58	-.05	.00	.16*
NA	3.18	1.28	1.00-6.88	.89	0.36	-0.59	-.16*	-.20**	.06
SWLS	4.98	1.05	1.60-7.00	.76	-0.38	-0.04	.09	.08	.14*

Note. α = Cronbach's alpha coefficient; *S* = Skewness; *K* = Kurtosis; SWB = Subjective Well-Being; PA = Positive Affect; NA = Negative Affect; SWLS = Satisfaction with Life Scale. $^{*}p < .05$; $^{**}p < .01$.

To further explore if singing characteristics can be important for well-being, we ran hierarchical regression analyses predicting each well-being indicator and controlling for age in the first step, while adding the singing characteristics in the second step. Results are presented in Table 3. In line with the correlational analysis, a small percentage of SWB variance (between 2.7-6.3%) was explained with age and singing characteristics in the regression analyses. As in the correlational analysis, importance was a significant predictor of life satisfaction. On the other hand, singing characteristics did not explain incremental variance above age for PA, although importance as a predictor was significant. For NA only the form of singing was a significant predictor together with age in the second step. Results of the regression analyses indicate that higher life satisfaction can be predicted in people who say that singing is highly important to them, and lower levels of NA can be predicted in older people who sing with others.

Table 3

Results of the Hierarchical Regression Analyses

	PA		NA		SWLS	
Step 1	β	*t*	β	*t*	β	*t*
Age	-.20	-3.02**	-.22	-3.26**	.07	0.97
	$F(1, 219) = 9.13^{**}$, Adj$R^2 = .036$		$F(1, 219) = 10.64^{**}$, Adj$R^2 = .042$		$F(1, 219) = 0.94$, Adj$R^2 = .00$	

Table 3 - Continued

	PA		NA		SWLS	
Step 2	β	*t*	β	*t*	β	*t*
Age	-.21	-3.03**	-.17	-2.55*	.04	0.60
Frequency	.03	0.44	-.08	-1.10	.13	1.75
Form	.05	0.71	-.15	-2.21*	.06	0.81
Importance	.16	2.33*	.00	0.06	.19	2.67*
	F (4, 216) = 3.78**, AdjR^2 = .048		F (4, 216) = 4.71**, AdjR^2 = .063		F (4, 216) = 2.54*, AdjR^2 = .027	
	ΔF (3, 216) = 1.95		ΔF (3, 216) = 2.66*		ΔF (3, 216) = 3.07*	

Note. PA = Positive Affect; NA = Negative Affect; SWLS = Satisfaction with Life Scale, β = standardized regression coefficient; t = t-test value; F = F-ratio; AdjR^2 = adjusted coefficient of determination; ΔF = difference in F-ratios. *$p < .05$; **$p < .01$.

Discussion

The purpose of this study was to further understand the association between several singing characteristics and well-being indicators by including both cognitive and affective component of SWB in the study and using a heterogeneous sample of amateur singers in terms of age, education and music education. So far, only two intervention studies in older adults (Galinha et al., 2022; Pires et al., 2018) have included both cognitive and affective component of SWB in the same study of singing. This study is a correlational study so it can offer different insight into possible associations between different singing characteristics and well-being indicators.

Results of both correlational and regression analyses showed that people who consider singing highly important have higher life satisfaction, and that singing with others is associated with less negative affect. Cuypers et al. (2011) found in a population-based study from Norway that participating in music and singing activities was significantly associated with higher life satisfaction in women, and our sample also had more female than male participants. Other studies (Lonsdale & Day, 2021; Radočaj-Jerković, 2022; Stewart et al., 2016; Wise et al., 1992) have not found differences in life satisfaction associated with singing, which is in line with our findings for frequency and form of singing. Several studies have indicated that singing is associated with more positive affect after singing (Dingle et al., 2017; Galinha et al., 2022; Grape et al., 2003; Kreutz et al., 2004; Weinstein et al., 2016). In our study, only the importance of singing was associated with PA in correlational analyses, while other singing characteristics (frequency and form) showed no association. In regression analysis, singing characteristics did not have incremental variance in explaining PA. It could be that effects of singing on PA are short-lived, as Dingle et al. (2017) study found, which would mean that a study design like ours would not be able to capture these effects. We found only one significant effect for

NA as well. Previous studies (Dingle et al., 2017; Kreutz et al., 2004; Pires et al., 2018; Weinstein et al., 2016) showed that negative affect decreased after singing. In our study, we found that singing with others was associated with less negative affect. This finding is in line with studies indicating that singing in a group can have specific beneficial effects on a person's well-being (e.g. Good & Russo, 2022).

There are some limitations to this study. Data were collected at a specific moment in time because group rehearsals were not possible for months due to COVID-19 restrictions and then started in June 2021, less than a month before the time of data collection. Therefore, it could be that some or all associations between singing characteristics and well-being indicators would be different in times when group rehearsals are a constant in the lives of singers. Youngblood et al. (2021) found in their study with community choir members that their well-being decreased as a result of cancelled rehearsals and performances, unfamiliar online music practices and loss of community due to the COVID-19 pandemic. We examined only a few singing characteristics and measured them with a single item, which could have also influenced our findings. Data collection was done using an online survey which could have an impact on the sample characteristics. Singers in our sample participated in different types of singing and it might be that associations between measured singing characteristics and well-being indicators are stronger for some types of singing than others which we were not able to capture with this study design.

We have found only some weak associations between measured singing characteristics and well-being indicators. In line with that, Lonsdale and Day (2021) have found when they compared solo singers, band/orchestra members, solo musicians, team sports players, and solo sports players that singing does not have a unique beneficial influence on well-being. Stewart and Lonsdale (2016) compared solo singers, choral singers and team sports players and have shown that there were no differences in life satisfaction and two measures of well-being between them. A significant difference was found only for one measure of mental well-being in a direction that there were no differences between team sports players and choral singers who both had higher scores than solo singers. This might indicate that membership in a group might have a more important influence on well-being than singing. However, singing and group singing in particular can offer a cost-effective preventive tool for increasing well-being in an adult population. Two recent studies investigated what choir singers perceive as the most important well-being benefits of group singing. Moss et al. (2018) found in a mostly female sample of 1,779 choir singers that they perceived the highest benefits from singing in a choir to be emotional and social. Hendry et al. (2022) interviewed six female choir singers and found three themes Social Factors, Psychological Factors, and Psychological Motivations for Joining the Group.

Our correlational findings obtained in a sample of adult amateur singers with both cognitive and affective measures of SWB add to the literature on the associations between singing and well-being. The results are in line with the

conclusion that singing could be a tool for increasing the well-being of people with group singing being better than singing *per se* since the strongest effect we found was for less negative affect when singing with others. Another significant predictor in our study was the importance of singing which might indicate that singing as an intervention for higher well-being should be used with those individuals who consider singing highly important, but are not actively participating in singing activities in their lives.

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