

Exploring perceptions and experiences of choir singers on their online choir rehearsals

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Abstract

The aim of this study was to investigate the effects of participating in online choir rehearsals. Sixty seven choir singers from across the Serbia were invited via email and took part in the study voluntarily. The results showed that the Zoom, Viber, and Skype platforms are most commonly used for online choir rehearsals. The singers believe that not all the technical conditions for holding online choir rehearsals have been provided and that they cannot make the same progress in online choir rehearsals as in classical rehearsals. Members of professional choirs more often than members of amateur choirs emphasize the feeling of belonging and connection with other singers and the opportunity to improve their vocal skills and musical knowledge through online rehearsals of the choir.

Keywords: online choir rehearsals, professional singers, amateur singers

Introduction

As one of the most accessible forms of collective music-making, choral singing has, historically speaking, always been woven into the life of society and man. Although it is primarily focused on the development of singing-technical ability, adoption, and interpretation of artistic choral repertoire, and subsequently on musical-aesthetic development, the activity of choral music-making, through joint action and cooperation, creates a sense of belonging and responsibility. Therefore, in addition to creating a sense of belonging, responsibility through joint action and cooperation of singers (Mirović and Ristivojević 2019), according to numerous scientific confirmations, choral music has a beneficial effect on his mental, emotional and physical condition (Beck et al. 1999; Reis and Berschield, according to Deci and Ryan 2000; Clift and Morrison 2011; Kreutz et al. 2004; Kreutz et al. 2004; Vickhoff et al. 2003). As such, choral singing can enrich an individual's life in many ways, especially in situations of unfavorable life events (Von Lob, Camic and Clift 2010) such as the global Covid-19 pandemic.

Producing multiple consequences for people's lives, such as adversely affecting their well-being and mental health (Huang and Zhao 2020; Sønderkov et al. 2020; Wang et al. 2020; Xiong et al. 2020), The Covid-19 virus, among other things, has caused an adverse impact on the field of culture and art throughout the world, including the Republic of Serbia. In this regard, in Serbia, the competent institutions have issued orders and decisions on anti-epidemic measures, including the abolition of choral singing. News coming from other parts of the world, such as the case of the Amsterdam choir in which 102 members contracted Covid-19, and the results of research that indicated that choral music activity carries a high risk of infection with the Covid-19 virus because, among other things, respiratory aerosol particles and droplets emit the most when singing louder and intonationally high tones (Alsved et al. 2020), choral singing has gained a reputation as an activity that must be avoided during a pandemic. However, choral singing activity has shown its vitality and adaptability to the epidemiological situation, so the virtual choir in the world experienced remarkable growth during isolation during the Covid-19 virus pandemic. This universal concept, using digital technology, connects choral singers from around the world, compiling and recombining their individual audio-visual recordings of the melodic sections they send from their locations, into a single collective performance. However, the possibility of choral music-making with other singers in real-time, especially in the period of choir rehearsals, where in addition to adopting a certain musical repertoire and working on its interpretation, perfecting the vocal skills and potential of each singer is currently not possible. In this regard, we often encounter the realization of online choir rehearsals through video conferencing, such as Zoom, but singers, in addition to the conductor, must turn off their microphone, because the transmission of audio signals of all participants will burden the connection and create a cacophony. This means that the realization of "joint singing" at online choir rehearsals is impossible, and the singer, while singing, in most cases can only hear himself and the conductor. However, despite such current limitations, but also the lack of face-to-face social interaction, virtual choral music, according to research by certain authors, no less than a classical choir, provides numerous benefits such as combating feelings of social isolation and disconnection from others (Fancourt and Steptoe 2019) now already current, among the population prevalent pandemic effects.

The benefits of virtual choral singing are determined not only by the technical equipment, but also by the choir singer's ability to understand the mechanisms of communication in the online choir community, and to adapt to its norms for successful cooperation with other members. In this regard, having in mind the social and cultural prejudices in Serbia regarding digital culture, partly responsible for the digital divide regarding

inequality in access to digital technologies (which is ultimately seen if, according to certain authors, we see a low level of ICT- and in education (Ivanović and Antonijević 2020), and the pandemic situation in which choral singers, in order to continue their activity, found themselves facing a great vocal and technical challenge, we wanted to see how choral music activity in Serbia functioned. In this regard, we intended to identify all the challenges and limitations that choir singers from Serbia encountered in the online choir environment.

Research

Research objective and research questions

The current study aimed to investigate the effects of participating in online choir rehearsals at the time of the COVID-19 pandemic. In addition, the purpose of this research was to find out whether professional singers do better in such work compared to amateur singers. The guiding questions are:

1. What online platforms are used to conduct online choir rehearsals?
2. Are all the necessary technical conditions for the realization of online rehearsals of the choir provided?
3. What are the positive effects of online choir rehearsals according to respondents/choir singers?
4. Can singers improve their vocal skills and musical skills through online rehearsals as well as in classical choir rehearsals according to respondents/choir singers?
5. Do the opinions of professional and amateur singers differ on the possibilities of improving vocal skills and musical knowledge in online choir rehearsals?

It should be stressed that the study reported below did not attempt to obtain data from a representative sample of a wider population of choristers. For these reasons, it is necessary to be very careful in the conclusions and to recognise that the findings may not be generalisable beyond the sample studied. Nevertheless, we believe that this survey represent an important contribution to an underresearched area, and provide a valuable stimulus to the development of further research.

Participants

In the research was used a random sample (Cohen, Manion and Morrison 2000) comprised of sixty seven choir singers of which 26 were professional singers employed in theaters as

members of opera choirs and 41 were amateur singers, members of amateur city choirs. The gender structure of the corresponding sample of surveyed singers consists of 34 women and 33 men (information on age was not requested). Singers come from 16 different cities. Most of them are from Belgrade (N = 31), Novi Sad (N = 11), and Kruševac (N = 8). The study involved those singers who had online choir rehearsals during the Covid-19 pandemic. Since we decided to use a random sample, the conclusions cannot be generalized to the entire population of Serbian singers. Nevertheless, we could draw some conclusions from the research.

Methodology

The survey was conducted during March 2021 using appropriate data collection procedures and instruments. For the purposes of the research, a survey questionnaire was constructed that contained 13 open and closed questions. The first part of the questionnaire asked questions about the socio-demographic characteristics of the research participants: gender, and place, or city where the singers live. The second part contained questions about the platforms that choirs use in online choir rehearsals, about the conditions that choirs have for holding online choir rehearsals, and about the possibility of improving vocal skills and musical knowledge of singers. Assessments were made by singers using a five-point Likert-type scale (1 = *strongly disagree*, 2 = *disagree*, 3 = *neither agree nor disagree*, 4 = *agree*, 5 = *completely agree*).

We used qualitative and quantitative analysis for data processing. For the purposes of qualitative analysis, we coded the obtained data, then converted them into categories and into a specific result. Based on the obtained results, we calculated the basic descriptive parameters: arithmetic mean (*M*), standard deviation (*SD*) and the percentage of obtained answers (%), and certain procedures of inferential statistics were used. We used the Mann-Whitney U (*z*) test to determine the differences between two independent groups within a single measurement (to compare responses with respect to the type of choir in which the singers are employees or members). The SPSS Statistics V26 program was used for statistical data processing (Petz 2007; Suzić 2007; Opić 2010) with statistical significance at the level of .05.

Results

The results showed that choirs use different platforms for online choir rehearsals, most often Viber, Zoom, and Skype. Viber was used to send recordings, and Zoom was used for choir rehearsals. The relationship in the answers is similar when singers are divided according to the type of choir in which they sang (professional choir or amateur choir) (Table 1).

Table 1.*Platforms for online choir rehearsals*

| | Professional singers | | Amateur singers | |
|--------------------|----------------------|-------|-----------------|-------|
| | <i>f</i> | % | <i>f</i> | % |
| <i>Viber</i> | 11 | 42.31 | 15 | 36.59 |
| <i>Zoom</i> | 10 | 38.46 | 13 | 31.71 |
| <i>Skype</i> | 5 | 19.23 | 7 | 17.07 |
| <i>Google meet</i> | 0 | 0 | 4 | 9.76 |
| <i>Google duo</i> | 0 | 0 | 2 | 4.88 |

Half of the singers ($N = 37$; 55.22%) stated that they did not have all the necessary technical conditions for the online rehearsals of the choir. When we divided the singers into two groups according to the type of choir in which they sing, the results showed that in both groups half of the singers think that they do not have good technical conditions, but such answers are slightly less in the group of professional singers (No - 53.85%) than in the group of amateur singers (No - 56.10%). The result of the Mann-Whitney U test ($z = -.015$, $p = .988$) showed that this difference is not statistically significant.

When it comes to the effects of participating in choir rehearsals at a distance, the singers did not show a strong agreement for any of the offered statements, and for the last statement "I think I can improve my vocal skills and musical knowledge just as I did before the period of home isolation" respondents expressed great disagreement. Also, the data on the total dispersion of responses indicate large individual differences in respondents' responses (Table 2).

Half of the singers ("4 + 5" = 56.72%) pointed out an advantage of holding choir rehearsals at a distance that sick singers could, by listening and watching, participate in these choir rehearsals. There is a smaller number of singers ("4 + 5" = 31.34%) who stated that the rehearsals were much more efficient because there was no conversation between the choir members that would disrupt the work during the choir rehearsal. Slightly more singers ("4 + 5" = 38.81%) stated that they focused more on their singing and how they could improve it thanks to the choir's rehearsals, and that they saw and understood the conductor better than on the classical choir rehearsals ("4 + 5" = 37.31%). Half of the singers ("4 + 5" = 46.27%) stated that

holding choir rehearsals at a distance was beneficial because by participating in them, they had a sense of belonging and connection with other singers. For some of the singers, long-distance choir rehearsals were helpful because they were not lonely ("4 + 5" = 41.79%), and felt better ("4 + 5" = 41.79%) at a time when they had to stay at home much longer. Half of the singers ("1 + 2" = 49.25%) disagreed with the statement that vocal skills and musical knowledge could be improved through remote choir rehearsals just as they had before when rehearsals were held in a classical way (Table 2).

Table 2

Singers' statements on the issue of the effects of participating in online choir rehearsals

| Thanks to online choir singing ... | <i>N</i> | 1 % | 2 % | 3 % | 4 % | 5 % | <i>M</i> | <i>SD</i> |
|--|----------|--------|--------|--------|--------|--------|----------|-----------|
| I focus more on my singing and how I can improve it. | 67 | 26.87 | 4.48 | 29.85 | 25.37 | 13.43 | 2.94 | 1.39 |
| I can see and understand the conductor better since the camera is close to his face. | 67 | 28.36 | 10.45 | 23.88 | 29.85 | 7.46 | 2.78 | 1.35 |
| Rehearsals are much more efficient because there are no conversations between choir members that disrupt the work. | 67 | 26.87 | 4.48 | 37.31 | 16.42 | 14.93 | 2.88 | 1.38 |
| Those who have fallen ill can, by listening and watching, participate in online choir rehearsals. | 67 | 14.93 | 4.48 | 23.88 | 38.81 | 17.91 | 3.40 | 1.27 |
| I have a sense of belonging and connection. | 67 | 25.37 | 8.96 | 19.40 | 29.85 | 16.42 | 3.03 | 1.45 |
| I am not lonely while staying in home isolation. | 67 | 28.36 | 4.48 | 25.37 | 28.36 | 13.43 | 2.94 | 1.42 |
| It helps me feel better while in home isolation. | 67 | 26.87 | 4.48 | 26.87 | 25.37 | 16.42 | 3.00 | 1.44 |
| I think I can improve my vocal skills and musical knowledge just as I did before the period of home isolation. | 67 | 40.30 | 8.95 | 25.37 | 22.39 | 2.98 | 2.39 | 1.30 |

Note. *M* = average values; *SD* = standard deviation

When we divided the singers into two groups according to the type of choir in which they sang, the results showed no major differences in the singers' responses regarding their focus on singing during the online rehearsal, visibility and comprehensibility of the conductor,

participation of sick singers in the online rehearsal and with a feeling of loneliness during isolation. Members of professional choirs more often emphasized a sense of belonging and connection with other singers ($z = -1.906, p = .057$) and the opportunity to improve vocal skills and musical knowledge ($z = -1.905, p = .057$), but here the difference was of borderline statistical significance. The results of the Mann-Whitney U test showed that responses differed statistically significantly ($z = -2.983, p = .003$) only for the statement that choir rehearsals were much more efficient because there was no conversations between choir members that would disrupt rehearsal work (Table 3). Therefore, we can say that distance choir rehearsals are more efficient in that sense for members of professional choirs.

Table 3

Singers' statements on the issue of the effects of participating in online choir rehearsals, in relation to the type of ensemble

| Thanks to online choir singing ... | Type of singing | N | M | SD | z | p |
|--|----------------------|----|------|------|--------|------|
| I focus more on my singing and how I can improve it. | Professional singers | 26 | 3.08 | 1.35 | -.532 | .595 |
| | Amateur singers | 41 | 2.85 | 1.42 | | |
| I can see and understand the conductor better since the camera is close to his face. | Professional singers | 26 | 3.08 | 1.35 | -1.437 | .151 |
| | Amateur singers | 41 | 2.59 | 1.32 | | |
| Rehearsals are much more efficient because there are no conversations between choir members that disrupt the work. | Professional singers | 26 | 3.54 | 1.14 | -2.983 | .003 |
| | Amateur singers | 41 | 2.46 | 1.36 | | |
| Those who have fallen ill can, by listening and watching, participate in online choir rehearsals. | Professional singers | 26 | 3.62 | 1.17 | -1.060 | .289 |
| | Amateur singers | 41 | 3.27 | 1.32 | | |
| I have a sense of belonging and connection. | Professional singers | 26 | 3.46 | 1.30 | -1.906 | .057 |
| | Amateur singers | 41 | 2.76 | 1.48 | | |
| I am not lonely while staying in home isolation. | Professional singers | 26 | 3.23 | 1.39 | -1.383 | .167 |
| | Amateur singers | 41 | 2.76 | 1.43 | | |
| It helps me feel better while in home isolation. | Professional singers | 26 | 3.19 | 1.39 | -.882 | .378 |
| | Amateur singers | 41 | 2.88 | 1.47 | | |
| I think I can improve my vocal skills and musical knowledge just as I did before the period of home isolation. | Professional singers | 26 | 2.77 | 1.34 | -1.905 | .057 |
| | Amateur singers | 41 | 2.15 | 1.24 | | |

Note. *M* = average values; *SD* = standard deviation; *z* = Mann-Whitney U test

We were also interested in what problems the singers encountered during the online choir rehearsals. These data were obtained by an open-ended question. The singers, first of all, pointed out the bad technical conditions, especially the bad Internet and the impossibility of singing at the same time (Table 4).

Table 4

Individual answers of singers about problems related to technical conditions

| | |
|-----------------------------|--|
| Professional singers | I often have problems with the Internet, so sometimes I can't join the rehearsal. |
| | When the sound stops, it's my worst. Definitely, live rehearsals are the best, nothing can be done like this. - professional singer |
| | To me, this is torture. While we normally had rehearsals, it was great, and this way we neither see nor hear each other. As soon as my signal weakens, I can't follow anything. - professional singer |
| | I love when we all hear each other nicely when my voice drowns in the whole sound. - professional singer |
| Amateur singers | The image often freezes, the video stops, and the sound is sometimes a disaster. - amateur singer |
| | It means to me when the conductor explains to me how to breathe while singing, she often corrected me at rehearsals, told me that sometimes I sing louder than others. Those remarks were important to me because that's how I learned to control my voice. So, how can she give me feedback when the whole choir is not heard? How can she judge whether I stand out again or not? - amateur singer |

Some singers pointed out the lack of digital skills of older singers as a problem. Their answers are given in Table 5.

Table 5

Individual answers of singers about problems related to the lack of digital skills of older singers

| | |
|-----------------------------|---|
| Professional singers | Two or three older people are present at the rehearsals because their family helps them, they would never be able to cope on their own in such conditions. |
| | I feel sorry for them because some older people are alone, they have no contact, the question of how they function at all. So I would put everything back to normal |
| Amateur singers | Well, a few singers from the band who are older don't participate in rehearsals at all, I guess they don't do well on the computer. |
| | Mostly, most singers are digitally literate, but the older ones have resistance, they are not interested in that. |

When it comes to sending their own recordings, the singer's opinions differ. Some singers stated that it was an opportunity for them to enjoy their voice and show their vocal abilities, and some singers stated that they do not like this way of singing because they are used to being surrounded by other singers. This is how they felt insecure (Table 6).

Table 6

Individual answers of singers about sending their own recordings

| | |
|-----------------------------|---|
| Professional singers | It's really great for me! I can relax and show my vocal abilities without endangering others. I shoot several times, I'm a perfectionist. I want to show how much I really can. |
| Amateur singers | Finally, I can also stand out in singing. I don't know, I feel "naked", I'm uncomfortable when I sing. I usually like to be surrounded by great singers, they draw my average. I sound bad when I sing alone, everything is heard. I don't like when I sing alone, I didn't even like when only a few of us have to sing something at these regular rehearsals ... I'm insecure. |

Discussion and conclusion

Given the social and cultural prejudices in Serbia regarding digital culture and the Covid-19 pandemic, thanks to which virtual space has replaced physical contact with people, choir ensembles, in order to continue their activity, faced a great vocal and technical challenge. In this regard, we were interested in the opinions of professional and amateur choir singers on whether and how their online choir community functioned during the pandemic.

The results of this study show that singers, especially amateurs, believe that the necessary conditions for the realization of an online rehearsal of the choir are not fully provided. Since the rehearsals were held via video conferencing, the synchronization of its essential component - image and sound, was hampered by a poor internet connection. Also, there is a problem of lack of technical skills of older choir singers, and programs for educating the elderly in the field of using modern technologies in everyday life are not so present in Serbia. In addition, the pandemic has imposed social isolation, which can cause depression and a lack of emotional support for others, especially among the elderly. The development of digital competencies of singers can contribute to their active participation in virtual choral music-making, which can help them suppress feelings of social isolation (Fancourt and Steptoe 2019)

and emotional tension. Namely, it is known that during choral music-making, certain processes take place in the brain, as a result of which the neurotransmitter dopamine, responsible for lowering emotional tension, is often released (Diener and Biswass-Diener 2008; Salimpoor et al. 2011). In addition to the lack of digital skills, there are problems with the shortage of technical equipment such as microphones, headphones, cables, and so on, as well as the potential cost of buying it, which limits the singer's ability to be involved in online choir rehearsals. Thus, they also deny the enjoyment of the benefits that the virtual choir provides. However, what frustrates singers the most are the limitations of the platform they use because they are not able to hear each other when singing at choir rehearsals. Namely, we see that to hold an online rehearsal of the choir, the Zoom application is most often used, which in addition to its advantages has the main drawback, which is the impossibility of collective live singing, ie singers do not hear each other in real-time. They have to turn off their microphone because the transmission of audio signals of all participants can burden the connection and thus cause cacophony. Thanks to such limitations, most professional and amateur choir singers believe that the realization of group work in this way is impossible and that the development of musical knowledge and musical skills is impossible in this way. For example, professional singers state that rehearsals lack a sense of group music and that they lack the overall harmonious context built by the voices of the collective within which the singer as an individual functionally fits, based on which he adjusts the fineness of his tone, intonationally equalizes and so on. Amateur singers, on the other hand, refer to the lack of classical work on the correct setting of voice and breathing, because, while the online rehearsal is being realized, everyone has the microphone turned off, so the conductor has no idea how the choir currently sounds as a whole. Based on that, he cannot provide adequate advice or any other feedback at a given time. However, the testimonies of the singers of both groups testify to the presence of a strong affinity for improving vocal potentials, as well as harmonizing all aspects of their own performance with other choir singers. In this regard, the musical and social coordination of members, in addition to the musical abilities of individuals, is an important condition for successful performance. However, in addition to the presence of a strong affinity for co-creation of music, collaborative practice can still be a source of various problems (Lehmann et al. 2007) such as discipline. In this regard, professional singers especially point out that, thanks to online rehearsals, a conversation between choir members that could interfere with the realization of rehearsal work is not possible. This attitude of professional choir singers, regardless of their observation of online choral music-making, speaks of a serious approach to work, no matter how effective it was.

In addition to discipline, from the aspect of favorable influence on well-being and mental health, almost half of the singers, due to "some" online choral music, felt better and connected with other singers in the period when they had to stay at home much longer. Moreover, during the period of isolation, some singers focused even more on their singing, especially when, to edit the final collective performance of the repertoire, they sent their audio-visual recordings of the learned melodic sections. In this regard, the choir singer in this situation moves to the position of the solo performer because, when recording his own section, social and musical coordination with other members of the choir in real-time does not exist. It is interesting that some singers, especially professional ones, viewed independent singing as an opportunity to express their vocal abilities in the best way, and in that sense, they recorded their melodic part several times until they found a satisfactory version of their performance. We assume that professional singers (especially those who have also been engaged in solo singing) are generally more restrained when it comes to adapting their performance to a group. Lehmann and co-workers believe that it can be a blow to "musical vanities" that initiates certain types of problems (Lehmann et al. 2007). On the other hand, most amateur singers, performing their part independently at home, ie without the sound support of the entire choir, felt a lack of self-confidence because, as they say, they exposed their vocal shortcomings. They are forced, as they say, to sing their own part, without the sound of other safer singers who could cover their vocal imperfections or mistakes with their voices. Considering that amateur singers, unlike professional ones, need musical support more, the project "Digital Choir Treasury" has started to be realized in Serbia. Within that project, matrices were placed on the website of the Serbian Choir Association (national choir organization), that is, audio files with the voices of singers, samples of how to sing compositions and pronounce the text. Recognizing the need for educational guidelines and tools for learning choral compositions that this project offers, conductor Tamara Adamov Petijević points out the following: „Users of these files are even able to go through two levels of singing training: performing their voice with a matrix - accompanied by the sound of a piano or choral score, as well as performing with a quartet of singers, composed of all the voices from the composition.“ (<https://svilara.kulturnestanice.rs/hor-sveti-stefan-decanski-digitalna-horska-riznica/>). Considering that none of the respondents stated that they use any of the matrices as musical support when recording their vocal part, we believe that the reason for this is the fact that the Digital Choir Treasury is in its infancy and that the matrix database probably does not contain compositions that make our respondents' repertoire.

There are certain limitations to this research that may affect the interpretation and context of the results. Although an effort was made to distribute the questionnaire to multiple addresses, it could only be accessed by those who have good technical conditions, but also the skill to answer online. Also, the next limitation is the small sample and the small number of people in the subsamples, and we consider the fact that virtual choirs are not widely represented in Serbia as the reason for the lower response of respondents. Having in mind the social and cultural prejudices in Serbia regarding digital culture, and on the other hand technological permanent development, it would be interesting to examine whether, in conditions that do not include pandemic measures, choirs would continue to work in a virtual environment. If they continued, how would their further progress flow?

Despite seeing the positive aspects of online choral music-making, choir singers are most frustrated because they cannot hear each other when singing at choir rehearsals. They are generally dissatisfied with the current situation and accordingly unanimously believe that musical knowledge and musical skills cannot be developed in this way. We think that the obtained results represent, on the one hand, information on how choral ensembles in Serbia are coping with the challenges imposed by the Covid 19 pandemic, and on the other hand, an appeal to the competent institutions of the Republic of Serbia to technologically support virtual choirs, but also choirs that did not have the opportunity to function virtually. In this regard, special state support is needed in developing the choir singer's ability to understand the mechanisms of communication in the online choir community and to adapt to its norms to successfully collaborate with other members. By providing adequate support and assistance from state institutions, but also by the unstoppable development of new technologies that would more closely mimic real-time choral music making, virtual choral activities will reach even greater social and cultural significance in Serbia and will be involved in the musical and comprehensive development of each individual with their wide range of possibilities.

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