

University of North Georgia

## Nighthawks Open Institutional Repository

---

Honors Theses

Honors Program

---

Spring 4-21-2020

### The Effect of Musical Activity on Depression Scores

Jessica Jensen  
jjjens6747@ung.edu

Follow this and additional works at: [https://digitalcommons.northgeorgia.edu/honors\\_theses](https://digitalcommons.northgeorgia.edu/honors_theses)



Part of the [Clinical Psychology Commons](#), and the [Counselor Education Commons](#)

---

#### Recommended Citation

Jensen, Jessica, "The Effect of Musical Activity on Depression Scores" (2020). *Honors Theses*. 56.  
[https://digitalcommons.northgeorgia.edu/honors\\_theses/56](https://digitalcommons.northgeorgia.edu/honors_theses/56)

This Thesis is brought to you for free and open access by the Honors Program at Nighthawks Open Institutional Repository. It has been accepted for inclusion in Honors Theses by an authorized administrator of Nighthawks Open Institutional Repository.

The Effect of Musical Activity on Depression Scores

A Thesis Submitted to  
The Faculty of the University of North Georgia  
In Partial Fulfillment  
Of the Requirements for the Degree  
Bachelor of Science in Psychology  
With Honors

Jessie Jensen

Spring 2020

## Abstract

This study hypothesized that individuals who play a musical instrument, or are musically trained, show significantly different levels of depressive symptoms than those who do not have experience with an instrument. Participants consisted of college students from a small South-Eastern university who filled out an online survey to report their levels of musicality and depression. The data showed no difference between those who have and have not played an instrument, but participants with high levels of musicality showed significantly higher depression levels. These results imply that playing an instrument and musicality are different constructs, and that those who experience higher depression may be drawn to music as a creative outlet.

*Keywords:* depression, musicality, musical experience

### Acknowledgements

First and foremost, I'd like to thank coronavirus for completely annihilating the second half of my last semester of my undergraduate experience. Just kidding, but I was told I can write whatever I want on this page, and am going to abuse that power as much as possible.

I would like to thank Dr. Steve Smith for always being willing to help me in any way possible, from writing my recommendation letters for graduate school, to stepping in last minute with my thesis and helping me figure out what exactly data analysis is (I apologize for how terribly it went). I'd also like to thank Dr. Morgan-Ellis for being willing to help with my research, and for giving me an incredible orchestral experience through college. Thank you to Dr. Dansby-Sparks for always answering my random questions when I come to his office unannounced or when I send multiple emails in one day, and for being supportive of my research and future plans and goals.

I would also like to thank my parents for always encouraging me to work as hard as possible to be the best version of myself that I can possibly be. They have supported me every way they possibly can, and I hope to be able to repay them some day for everything they have done for me. Finally, thank you to Madison Rodriguez and Sarah Hastings for always being willing to help me when I get discouraged and for letting me talk through this research on an almost daily basis. Thank you for being my biggest supporters and my best friends.

This thesis is dedicated to my pup Lucy Jensen, who we lost towards the completion of this research, after 13 years of friendship and love. She will always be in my heart.

Lucy Jensen, 10/13/2007-3/13/2020

### The Relationship between Musical Activity and Depression Scores

Being able to play a musical instrument is a desirable trait due to its known neurological and intellectual benefits, with 54% of American households reporting having at least one member who plays an instrument in 2003, and this number continues to rise (Calif 2003). The goal of the current research is to see if individuals who play a musical instrument, or are musically trained, show significantly different levels of depressive symptoms than those who do not have experience playing an instrument. In addition, it measures varying levels of musicality, and analyzes how these correlate with depression levels. Previous research is largely in relation to the behavioral impacts of music on the brain, as well as the usage of music therapy for various psychological issues. This existing knowledge base allows for further research to be done in regards to the positive effect of music education and music therapy.

Playing a musical instrument has multiple effects on the cognitive processes of individuals. For example, Jakobson et al. (2008) discovered that formal musical training is associated with far higher levels of verbal and visual memory capacity. Musicians were able to recall word lists, both immediately and delayed, far more efficiently to non-musicians. They also showed a greater aptitude for free recall of words and designs, showing that musical training is associated with enhanced auditory and visual memory. In addition to higher-performing memory, musical training is associated with higher levels of visual attention (Rodrigues et al. 2013). This cognitive benefit was shown in relation to selective, divided, and sustained attention, meaning musicians are able to stay attentive in a large variety of environments more so than those who have not been musically trained. In addition, Schellenberg (2006), discovered that even when multiple potential confounds were held constant, the length of time in music lessons had a positive correlation with IQ scores in children. In undergraduate students, those who

played an instrument as a child also showed higher levels of intellectual functioning, meaning that this relationship does not go away with time; there are long term benefits of playing an instrument on intellectual levels. These studies collectively suggest that playing an instrument can provide many cognitive advantages for an individual.

Music education has been proven to help students academically, with positive correlations between music achievement and all school subjects (Guhn, Emerson, & Gouzouasis, 2020). In addition, music education has been shown to have positive impacts on cognition, in that it can be a catalyst to neural development, brain potential, and cerebral nerve functions (Zhang, 2018). The current research contributes to this knowledgebase in that it allows for relations to be made between mental constructs in addition to academic performance and neurological development.

It is known that music has direct effects on the brain, whether this is through listening to music or playing a musical instrument. Lepping et al. (2016) delved into these neurological influences to see if individuals with depression showed differences in processing music and auditory stimuli. Using functional Magnetic Resonance Imaging (fMRI), they were able to observe that individuals who were not depressed showed more activation to positive information in the rostral part of the anterior cingulate cortex (ACC), while those with major depressive disorder responded more to negative stimuli. This suggests that if an individual has depression, they are more likely to respond to negative information, and may be potentially drawn to more negative or sad music. Burunat et al. (2018) delved further into the neurological functions associated by music by using fMRIs to image the brains of musicians and non-musicians listening to music of different genres. Musical training was shown to influence the activity in the right superior temporal gyrus, an area thought to be involved in the processing of high-level

musical features. This part of the brain is also involved in social perception, or being able to process non-verbal cues and mental states of others. This shows that further activation of this brain area could be beneficial to social aspects of life, and that being engaged in music can have neurological benefits. By finding more neural differences in depressed individuals, researchers can have more insight into what parts of the brain are affected and can use this information to figure out new treatments for patients with depression.

The use of music therapy has been increasing in popularity, with 4.28 million professionals certified and growing (O\*Net Online 2020). In Reilly's research (1997) an online virtual instrument was used that is able to turn movements and gestures into music. By using this tool with patients with depression or manic symptoms, Reilly was able to conclude that music and movement therapy could potentially help patients with symptoms relating to mania and depression. Various forms of music therapy have also been used in geriatric patients. For example, Seinfeld et al. (2013) wanted to see if there is a difference between the effects of musical training and other activities in the elderly. To do so, they compared mood, quality of life, and cognitive function in relation to progress with playing the piano. The results indicated that piano lessons decreased depression levels and increased positive moods among the targeted group. Research has also been done in the opposite direction: to see if depression has an impact on musical ability. Reker et al. (2014) tested this with in-patients, and discovered that as depression levels in patients decreased, their ability to play music increased. These results led the researchers to conclude that music therapy for individuals with depression could increase their quality of life. Through all of these studies, a general conclusion can be made that music is capable of increasing quality of life and lowering depression.

The concept of musical experience is different from that of musicality. A distinction was made between the two when Mullenseifen et al. (2014) created the Goldsmith's Musical Sophistication Index, or the Gold-MSI. The goal of this new inventory was to tap into this concept of musicality, instead of simply focusing on the time spent playing an instrument. They defined musicality as the multifaceted nature of musical expertise. This idea of musicality is specifically created to include the individual differences that exist within a society where types of music vary widely. This allows for one to measure this concept in a way that is not specifically relating to professional musicians, and for musicality to be equalized between various types of instruments and music styles. While those who play an instrument often score higher in musicality, it is also possible that someone will score higher in musicality because of other factors, such as the extent they listen to music, the enjoyment they get from hearing music, and the believed innate ability of certain people to be more musically inclined. Mullenseifen takes into account factors that could lead to one individual playing an instrument over another, such as financial status and availability of a music program, and recognizes that one can score high in musicality despite not playing an instrument. In addition, someone who has played an instrument may not have experienced enjoyment and engagement with the instrument, leading them to potentially score low in musicality. The researchers constitute the difference between musical engagement and musicality through the idea that playing an instrument may have to do with factors other than out of enjoyment of music.

When originally creating the Gold-MSI, the researchers identified different factors that they believed would be influential in what makes an individual more musical. Through testing many different kinds of factors, they found five that were positively correlated with each other and the overall variable of musical sophistication. By combining factors that involve past or

current behaviors with factors of self-assessed musical skills, a more refined definition of musicality can be determined. Each factor is largely different from the others in what they ask, and therefore can be examined separately as well as in the overarching factor of musicality.

Although previous research has increased the understanding of musicality and how it affects individuals and humans as a whole, there is not enough information to determine if playing an instrument and/or musicality have a significant influence on depression levels. This study tests the hypothesis that individuals who play an instrument will have lower depression levels than those who do not. In addition, those who show higher levels of musicality have significantly lower depression scores than those who have lower levels of musicality.

## **Method**

### **Participants**

The participants consisted of college students at the University of North Georgia. These participants were student volunteers who had the option of participating in research for course credit for introductory psychology classes. There were a total of 248 participants, with the majority being female and in their first year of college. Of the participants, 151 reported having played a musical instrument before, and 97 reported having never played a musical instrument.

### **Procedures**

Participants were volunteers asked to take an online survey. This survey took on average about 10 minutes to take. The study received approval through the Institutional Review Board prior to the research taking place. At the beginning of the survey, participants were asked to consent to the study before being able to take the survey. They were then asked demographic questions, followed by the Major Depression Inventory (Bech et al., 2001) and the Gold-MSI

(Mullenseifen et al., 2014). Upon completing the survey, they were granted research credit through SONA.

### **Measures**

Goldsmith's Musical Sophistication Index (Mullenseifen et al., 2014) was used to measure musicality [appendix 2]. The inventory consists of 33 items ranked on a 7-point Likert scale. Mullenseifen et al. reported a Cronbach's alpha of .93, indicating a high level of reliability. The current research found an alpha level of .82, confirming the high level of reliability of the index. The index is broken into 5 subscales or factors: active engagement, perceptual abilities, musical training, singing abilities, and emotions. Active engagement refers to the individual's commitment to music; perceptual abilities refers to the ability to judge music and to recognize specific characteristics of music. Musical training describes the test-taker's specific and individualized experience with music; singing abilities describe to the ability to hit a pitch and to recognize a tune. Finally, emotions describes the emotional and mental response to the music. For the current research, Factor 3, musical training, was left out, due to the free response nature of the questions.

The Major Depression Inventory (Bech et al. 2001) was used to measure depression levels [appendix 1]. This inventory includes ten items ranked on a 5-point Likert scale. The researchers indicated a Cronbach's alpha level between .86 and .92, and the current research found an alpha level of .90, indicating high reliability.

### **Results**

The main hypothesis of the research was that individuals with musical experience would have lower depression levels than those without musical experience. An independent samples t-test showed that depression levels did not differ between those who reported having played an

instrument ( $M = 30.21$ ,  $SD = 8.14$ ) versus those who have not ( $M = 29.84$ ,  $SD = 9.40$ ),  $t(246) = .33$ ,  $p = .743$ .

Participants with past musical experience scored higher on the Gold-MSI overall,  $t(246) = 4.43$ ,  $p < .001$ . In addition, they scored higher on all scales of the musicality index, where an independent samples t-test showed all factors with  $t > 2.5$ ,  $p < .01$ . Musicality had a positive correlation with depression levels,  $r(246) = .151$ ,  $p = .017$ , which is the opposite of the hypothesis of musicality being correlated in lower depression levels. This proves the relationship to depression varied between the two concepts surrounding music, musical experience and musicality.

To break this down further, the relationship between the subscales of the musicality measure with depression was examined. Factor 1, active engagement, and Factor 5, emotions, showed a correlation to depression. Factor 2, perceptual abilities, and Factor 4, singing abilities, did not show a correlation to depression. [table 1]. To further investigate these results, a regression analysis was run including the dichotomous variable of musical experience and the continuous factor of the musicality scales, with depression as criterion variable. It showed that only factor 5, emotion, was significant,  $\beta = .195$ ,  $p = .032$ . This means that emotion is the main factor playing a role in the correlation between musicality and depression.

Gender differences were observed for both depression and musicality. For depression, males scored significantly lower than females  $t(245) = -3.24$ ,  $p = .001$ . The same was shown in relation to musicality, with males scoring significantly lower than females,  $t(245) = -3.01$ ,  $p = .003$ . Most of the factors showed gender differences as well. For Factor 1, females scored significantly higher than males,  $t = 2.61$ ,  $p = .01$ . Factor 4 also showed females scoring higher

than males,  $t = 3.19, p = .002$ . Finally, on Factor 5, the same occurred with females scoring higher than males,  $t = 3.67, p < .001$ . [table 1]

## **Discussion**

### **Implications**

The results of this study showed that those who scored higher in musicality also scored higher for depression levels. This finding is consistent to the findings of Dillman Carpentier (2008), in which the researchers discovered that depressed adolescents are more likely to turn to forms of media and art, including music, than those who are not depressed. The correlation found could be due to individuals with depression turning to music as an outlet for their emotion. This also could account for why the emotions factor was the most influential on depression. This factor included questions asking about music evoking emotions and memories and being able to identify what about a specific musical piece is special to the individual. This factor largely encompasses the idea of music as a mechanism to cope with emotions, further confirming Dillman Carpentier's findings that people turn to music in times of emotion and emotional distress. Another example of music correlating to mood comes from Stewart et al. (2019), where they found that those who are made aware of the tendency to listen to sad music when in a depressive state are more likely to change their music to shift away from a negative emotion or mood. However, without this awareness, these individuals are more likely to listen to negative music to cope with their feelings. This is an example of using music as a coping mechanism; in both cases, participants use music to deal with their emotions, whether it is positively or negatively. The same relationship may occur with musicality, in that participants of the current research who scored high in depression may also use music as a coping mechanism.

### **Limitations**

Specific to this study is the limitation of not knowing at what age or how long ago those who reported having played an instrument did so, and for how long. The results showed no difference between playing and not playing an instrument; however, they did show differences between the levels of musicality. This could be because people who reported having played an instrument in the past may have done it years before, and only for a limited time, or because of pressure from family to do so. Since the study did not ask this question, it cannot be determined if this is the reason for the difference in results between the two parts of the research question.

By eliminating Factor 4 from the research, the descriptive information further regarding musical training is missing. This factor was not included due to the questions being free response, resulting in qualitative data rather than quantitative. If this research would be replicated, this factor should be left in for the sake of descriptive information, and to look further into what causes the difference between playing an instrument and musicality.

Another potential limitation is that the survey did not specify if singing counts as playing a musical instrument. Therefore, some singers may have responded saying no, they have never played an instrument, while others may have responded that they do. This could be another influencing factor in the lack of relationship between depression levels and simply playing an instrument or not.

Finally, the lack of diversity in the population can be considered a limitation of the research. Participants were taken from a small military university in the Southeastern United States, which may lead to similarities among participants that may not exist in other regions or populations. In addition, this study does not prove causation. Since it was a survey and not an experiment, it is not possible to tell if there are confounding variables involved that would lead to the relationship between musicality and depression.

**Future research**

The goal of the current research was to determine directly the relationship between depression and playing a musical instrument in young adults/college aged students. Future research could expand upon the current results by repeating the study with different populations; for example, one could look into the same concept but with older populations to determine if playing an instrument is still beneficial mentally later in life. This could benefit the field of gerontology in that it could give a new way to diagnose, prevent, and treat depression within this population, especially in nursing homes or inpatient centers where they are no longer able to live on their own.

In addition, one could examine musicality in relation to other mental health aspects, such as anxiety or confidence. This would allow for a more well-rounded view of how playing an instrument is related to mental wellbeing as a whole. Comorbidity among disorders should be considered when studying mental health. By looking into disorders related to depression, such as anxiety, psychologists would be able to determine if music is truly related to the disorder, and if it could be a treatment in addition to being a related factor.

A longitudinal experiment in which participants are taught to play an instrument with depression or other mental constructs are measured along the way would also prove beneficial as additional future research. This would be difficult to conduct and would require a large sample size to account for differences in individual hardships, but if done effectively, could be a breakthrough for mental health, music therapy, music in the education system, and provide a basis for other fields to conduct research regarding music helping psychological or potentially physical illness and wellbeing.

## References

- Bech, P., Rasmussen, N., Olsen, L., Noerholm, V., & Abildgaard, W. (2001). The sensitivity of the Major Depression Inventory, using the Present State Examination as the index of diagnostic validity. *Journal of Affective Disorder, 66*(2-3), 159–64. doi:10.1016/s0165-0327(00)00309-8
- Burunat, I., Saari, P., Brattico, E., & Toiviainen, P. (2018). Decoding musical training from dynamic processing of musical features in the brain. *Scientific Reports, 708*. doi:10.1038/s41598-018-19177-5
- Calif, C. (2003). Gallup organization reveals findings of “American attitudes towards making music” survey. *National Association of Music Merchants*. Retrieved from <https://www.namm.org/news/press-releases/gallup-organization-reveals-findings-american-atti>
- Dillman Carpentier, F., Brown, J., Bertocci, M., Silk, J., Forbes, E., & Dahl, R. (2008). Sad kids, sad media? Applying mood management theory to depressed adolescents’ use of media. *Media Psychology, 11*(1), 143–166. doi:10.1080/15213260701834484
- Guhn, M., Emerson, S., & Gouzouasis, P. (2020). A population-level analysis of associations between school music participation and academic achievement. *Journal of Educational Psychology, 112*(2), 308–328. doi:10.1037/edu0000376
- Jakobson, L., Lewycky, S., Kilgour, A., & Stoesz, B. (2008). Memory for verbal and visual material in highly trained musicians. *Music Perception: an Interdisciplinary Journal, 26*(1), 41–55. doi:10.1525/mp.2008.26.1.41
- Johnson, K., & Heiderscheit, A. (2018). A survey of music therapy methods on adolescent inpatient mental health units. *Journal of Music Therapy, 55*(4), 463–488. doi:10.1093/jmt/thy015
- Lepping, R. J., Atchley, R. A., Chrysikou, E., Martin, L.E., Clair, A. A., Ingram, R.E., & ... Savage, C. R. (2016). Neural processing of emotional musical and nonmusical stimuli in depression. *Plos ONE, 11*(6).

- Li, Q., Wang, X., Wang, S., Zie, Y., Li, X., Xie, Y., & Li, S. (2018). Musical training induces functional and structural auditory-motor network plasticity in young adults. *Human Brain Mapping, 39*(5), 2098-2110. doi:10.1002/hbm.23989
- Müllensiefen, D., Gingras, B., Musil, J., & Stewart L. (2014). The musicality of non-musicians: An index for assessing musical sophistication in the general population. *PLoS ONE, 9*(2): e89642. doi:10.1371/journal.pone.0089642
- Music Therapy. (2020). *Data USA, O\*Net*. Retrieved from <https://datausa.io/profile/cip/music-therapy#skills>
- Reilly, J. F. (1997). LIGHTNING strikes: A correlational study of the gesturo-musical responses of in-patients with acute manic or depressive symptomatology using the LIGHTNING module. *Journal of Music Therapy, 34*(4), 260-276. doi:10.1093/jmt/34.4.260
- Reker, P., Domschke, K., Zwanzger, P., & Evers, S., (2014). The impact of depression on musical ability. *Journal of Affective Disorders 156*150-155. doi:10.1016/j.jad.2013.010
- Rodrigues, A., Loureiro, M., & Caramelli, P. (2013). Long-term musical training may improve different forms of visual attention ability. *Brain and Cognition, 82*(3). 229–235. doi:10.1016/j.bandc.2013.04.009.
- Schellenberg, G. (2006). Long-term positive associations between music lessons and IQ. *Journal of Educational Psychology, 98*(2), 457—468. doi:10.1037/0022-0663.98.2.457
- Seinfeld, S., Figueroa, H., Ortiz-Gil, J., & Sanchez-Vives, M. V. (2013). Effects of music learning and piano practice on cognitive function, mood and quality of life in older adults. *Frontiers in Psychology, 4*. doi:10.3389/fpsyg.2013.00810
- Stewart, J., Garrido, S., Hense, C., & McFerran, K. (2019). Music use for mood regulation: self-awareness and conscious listening choices in young people with tendencies to depression. *Frontiers in Psychology, 10*, 1199. doi:10.3389/fpsyg.2019.01199

Zhang, Q. (2018). Application of music education in brain cognition. *Kuram ve Uygulamada Egitim Bilimleri/Educational Sciences: Theory & Practice*, 18(5), 1960–1967.

## Tables

Table 1. Pearson Correlations between Musicality Factors and Depression (N = 248)

<u>Factor</u>	<u>Pearson correlation</u>	<u>Sig.</u>
Active engagement	.157	.014
Perceptual abilities	.072	.260
Singing abilities	.080	.210
Emotion	.189	.003

Table 2. Gender Differences Descriptive Statistics

<u>Factor</u>	<u>Gender</u>	<u>Mean</u>	<u>Standard Deviation</u>
Depression	Male	26.68	7.34
	Female	30.95	8.73
Musicality	Male	134.91	24.05
	Female	144.85	21.83
Active engagement	Male	27.27	4.77
	Female	29.06	4.46
Perceptual abilities	Male	43.71	8.28
	Female	44.96	7.65
Singing abilities	Male	26.28	7.72
	Female	29.88	7.32
Emotions	Male	28.96	5.56
	Female	31.84	5.04

## Appendices

**Appendix 1: Major Depression Inventory**

Please report how much of the time in the past month... (1=at no time; 2=some of the time; 3=slightly less than half the time; 4=slightly more than half the time; 5=all the time)

1. Have you felt low in spirits or sad?	1	2	3	4	5
2. Have you lost interest in your daily activities?	1	2	3	4	5
3. Have you felt lacking in energy and strength?	1	2	3	4	5
4. Have you felt less self-confident?	1	2	3	4	5
5. Have you had a bad conscious or feelings of guilt?	1	2	3	4	5
6. Have you felt that life wasn't worth living?	1	2	3	4	5
7. Have you had difficulty concentrating, e.g. when reading the newspaper or watching television?	1	2	3	4	5
8a. Have you felt very restless?	1	2	3	4	5
8b. Have you felt subdued or slowed down?	1	2	3	4	5
9. Have you had trouble sleeping at night?	1	2	3	4	5
10a. Have you suffered from reduced appetite?	1	2	3	4	5
10b. Have you suffered from increased appetite?	1	2	3	4	5

**Appendix 2: Musical Sophistication Index**

Rate each statement, with 1 being completely disagree; 2 strongly disagree; 3 disagree; 4 neither agree nor disagree; 5 agree; 6 strongly agree; 7 completely agree.

1. I spend a lot of my free time doing music-related activities.	1	2	3	4	5	6	7
2. I sometimes choose music that can trigger shivers down my spine.	1	2	3	4	5	6	7
3. I enjoy writing about music, for example on blogs and forums.	1	2	3	4	5	6	7
4. If somebody starts singing a song I don't know, I can usually join in.	1	2	3	4	5	6	7
5. I am able to judge whether someone is a good singer or not.	1	2	3	4	5	6	7
6. I usually know when I'm hearing a song for the first time.	1	2	3	4	5	6	7
7. I can sing or play music from memory.	1	2	3	4	5	6	7

8. I'm intrigued by musical styles I'm not familiar with and want to find	1	2	3	4	5	6	7
9. Pieces of music rarely evoke emotions for me.	1	2	3	4	5	6	7
10. I am able to hit the right notes when I sing along with a recording.	1	2	3	4	5	6	7
11. I find it difficult to spot mistakes in a performance of a song even if I	1	2	3	4	5	6	7
12. I can compare and discuss differences between two performances or	1	2	3	4	5	6	7
13. I have trouble recognizing a familiar song when played in a different	1	2	3	4	5	6	7
14. I have never been complimented for my talents as a musical	1	2	3	4	5	6	7
15. I often read or search the internet for things related to music.	1	2	3	4	5	6	7
16. I often pick certain music to motivate or excite me.	1	2	3	4	5	6	7
17. I am not able to sing in harmony when somebody is singing a	1	2	3	4	5	6	7
18. I can tell when people sing or play out of time with the beat.	1	2	3	4	5	6	7
19. I am able to identify what is special about a given musical piece.	1	2	3	4	5	6	7
20. I am able to talk about the emotions that a piece of music evokes for	1	2	3	4	5	6	7
21. I don't spend much of my disposable income on music.	1	2	3	4	5	6	7
22. I can tell when people sing or play out of tune.	1	2	3	4	5	6	7
23. When I sing, I have no idea whether I'm in tune or not.	1	2	3	4	5	6	7
24. Music is kind of an addiction for me - I couldn't live without it.	1	2	3	4	5	6	7
25. I don't like singing in public because I'm afraid that I would sing	1	2	3	4	5	6	7
26. When I hear a piece of music I can usually identify its genre.	1	2	3	4	5	6	7
27. I would not consider myself a musician.	1	2	3	4	5	6	7
28. I keep track of new music that I come across (e.g. new artists or	1	2	3	4	5	6	7
29. After hearing a new song two or three times, I can usually sing it by	1	2	3	4	5	6	7
30. I only need to hear a new tune once and I can sing it back hours later.	1	2	3	4	5	6	7
31. Music can evoke my memories of past people and places.	1	2	3	4	5	6	7