



Using Music as Medicine – finding the optimum music listening ‘dosage’ An excerpt of a study by Lyz Cooper MA, MSc

Introduction and Context

Humans have used music to improve health and wellbeing for tens of thousands of years. Evidence has been found in caves dating back to the Palaeolithic era which shows that up to 40,000 years ago humans were making music.¹ Over thousands of years humans have evolved to respond to music in certain ways. With the advancement of technology, we can look deeper into the brain than ever before and gain a greater understanding of how and why music is such a powerful healing tool.

Music improves health and wellbeing by affecting our neurochemical systems for reward and pleasure; stress and arousal; immunity; and social affiliation.² Levitin (2013) states, ‘many people use music to regulate mood and arousal, much as they use caffeine or alcohol’². To many people, music is an important part of their health and wellbeing – a musical supplement if you like. These ‘sonic vitamins’ play just as important a role as a morning coffee or glass of wine in the evening. Many studies have been conducted to help us understand how and why music affects mind body and emotions over the years but there is a significant gap in research that explores *how* we use music to help us process every-day emotions, self-regulate and even self-medicate. There is also little research that explores what it is about the music that we find most effective. Is there a magic ingredient or ‘sonic vitamin’ within a piece and which genre(s) are most commonly used by individuals? Time also played an important factor – how long does it take before one receives the intended therapeutic benefit? If an optimum time was found, one could then suggest a dosage of music for different intended therapeutic outcomes.

With this in mind a number of questions were asked in order to discover how many people consider music to be a supplement and if so, is there an ideal dosage or even a recommended daily allowance for music listening for optimum health and wellbeing?

Out of a general population of volunteers from selected countries around the world n= 7581 took part (n = 3757 female, n = 3768 male, n = 13 identified as other than male or female, and n = 43 preferred not to say).

89% of participants agreed to music being important for their health and wellbeing; 90.15% used music to relax; 28.15% to manage anger; 81.80% to make them happy; 32.53% to aid concentration and 46.5% to process and/or release sadness. Participants volunteered to take part in the research online.

The 11% of participants that did not consider music to be important to their health and wellbeing were thanked for their time and taken to the end of the survey, the remaining 89% continued. If a participant

did not use music for anger for example, they were skipped onto the next domain. With regard to the first 4 domains of relaxation, anger, happiness, concentration and sadness the following questions were asked:

- What genre of music did participants find the most effective? 24 genres were explored including classical, pop, new age, world, hip hop and dubstep.
- What was it about the music that was particularly effective (such as instrumentation or lyrics for example)?
- How long did it take to feel the therapeutic effects of the music?
- What were the main therapeutic effects experienced?

Carefully chosen and adapted peer reviewed questionnaires were used to gather more information on the genres and Likert scales were used to ascertain the degree of the effect.^{3,4} Qualitative data was analysed on a percentile basis. Carefully chosen and adapted peer reviewed questionnaires were used to gather more information on the genres and Likert scales were used to ascertain the degree of the effect.

Participants were also asked to name their favourite tracks in each of the different domains. One aim was to see if any patterns developed but it was anticipated that there would be a wide variety of answers. With the information gathered Deezer editors would create therapeutic playlists compiling the top 10 tracks in each genre that would play for the total dosage of time in each domain.

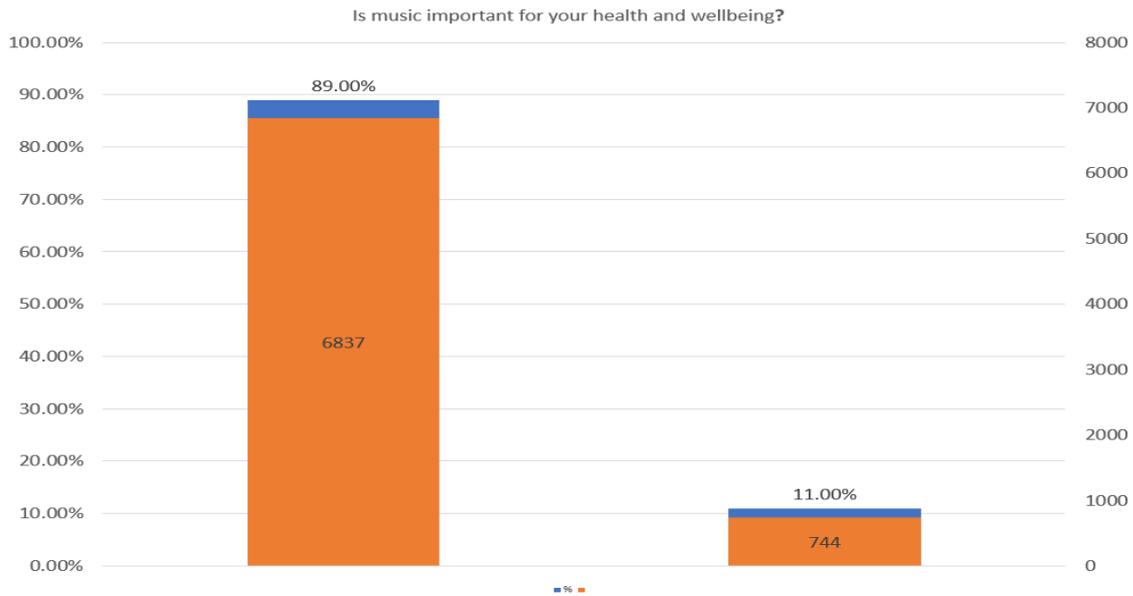
Another aim of this study was to ascertain if there was a correlation between individuals that were open to listening to new genres of music they would not usually consider and the personality domain of openness. Openness is one of the traits of the 'Big 5 Personality Theory'.⁵ Linked to open-mindedness, resilience and creativity, an individual with a high level of openness enjoys trying new things, learning about themselves and others and bounces back more quickly when faced with challenges.

Conclusion

There was a general agreement of dosage time across 3 of the 4 domains with 11 minutes being the most common amount of time it took for people to receive the therapeutic benefit from their self-selected music preferences. The only exception was the domain of happiness where the most common length of time for people to become happier after listening to their chosen music was reduced to 5 minutes, suggesting that happy music takes less time to take effect than other music. More studies would need to be undertaken to establish a 'before' and 'after' mood-state to support these findings. This study revealed many interesting elements of how people use music as medicine.

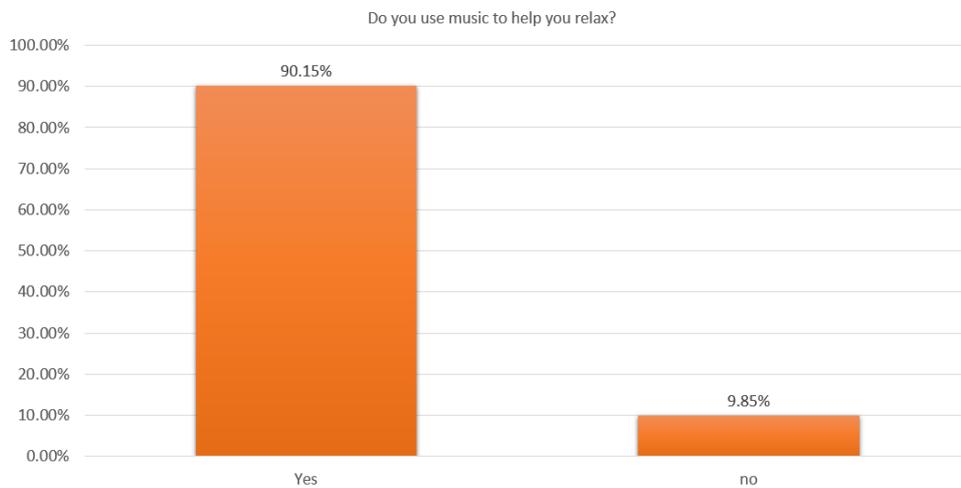
Results and Analysis

We asked 7581 people if they felt music was important to their health and wellbeing.



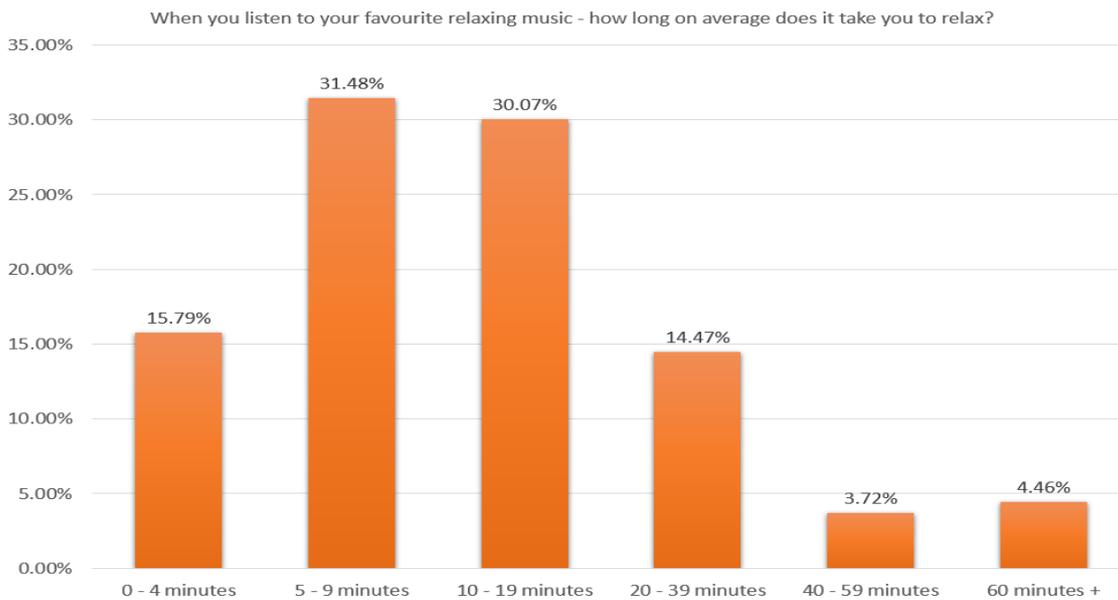
Relaxation

There have been numerous studies that have shown that music can significantly reduce the stress hormones cortisol and adrenaline.^{6,7}



The total percentage of people that used music to relax was 90.15% This was further broken down into markets with the highest percentage of people using music to relax being in the UK.

To establish a 'dosage' for relaxation music we asked people how long they took before they felt relaxed.



A large number of people indicated that they felt the relaxing effect of the music within 5 – 19 minutes. This correlates with the observations made by The British Academy of Sound Therapy following research undertaken with thousands of case studies over a 25 year period. The therapeutic effect of sound and music seems to start after approximately 5 minutes. There are always exceptions and if people are very stressed it may take them longer to relax, but as a rule of thumb the system appears to entrain to the music after approximately 5 minutes and the above results support our previous findings.

With this in mind we have created two dosages – a ‘common dosage’ based on the highest percentage of participants who felt the therapeutic effects of the music and an ‘average dosage’ by taking a mean average across the whole group.

Common Dosage for Relaxation - 11 minutes

Average Dosage for Relaxation - 16 minutes

Therapeutic Effects

Participants were asked a range of different questions to discover which of the most common relaxing effects were experienced. The following respondents agreed that;

There was less muscle tension 79.20%

Negative thoughts disappeared 84.31%

I felt peaceful and contented 91.69%

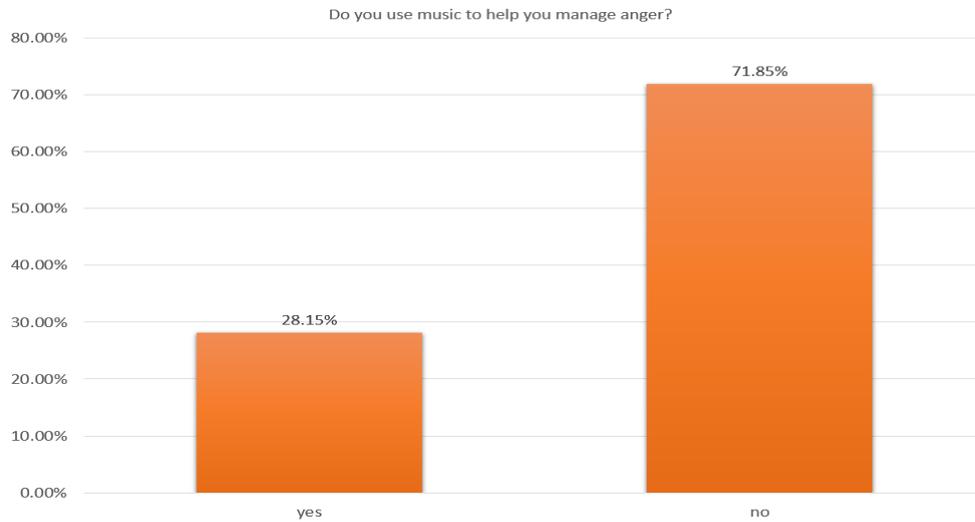
I can sleep better 82.30%

Anger

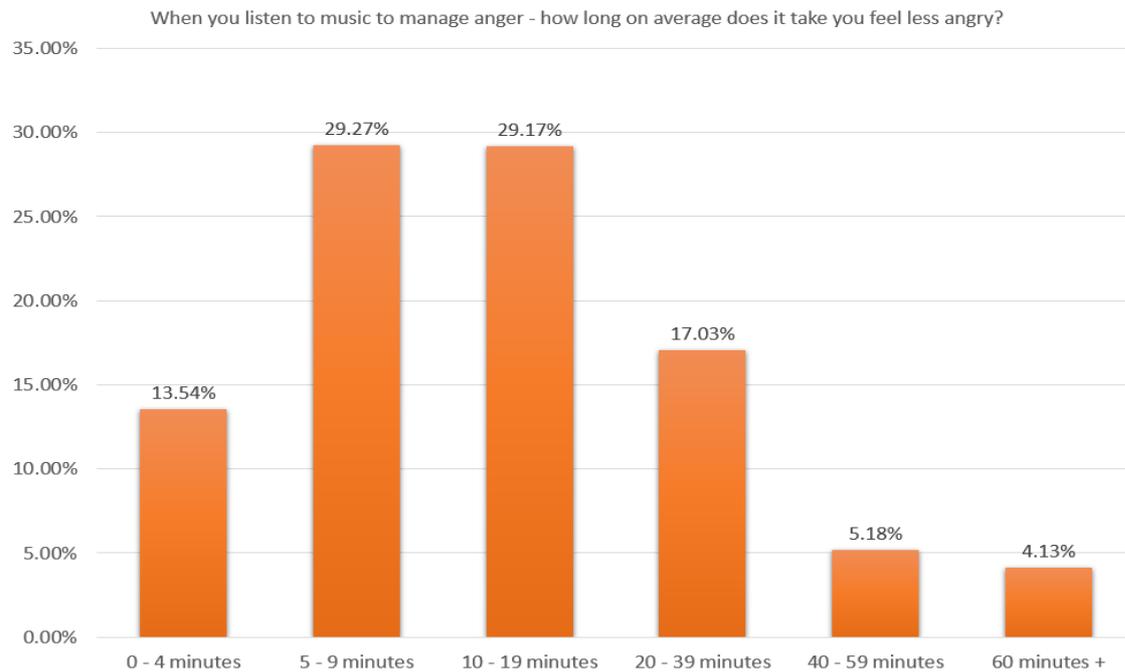
There is research that shows that listeners are drawn to music that either reflects or improves their emotional state.¹¹ It is plausible that ‘angry’ music may be chosen when a listener is angry, because

the arousing nature of the music resonates with the current angry internal state and this resonance enables the listener to make sense of, process and manage their emotions.

Do you choose music to help you manage your anger?



We observed a large number of people selecting 5 – 19 minutes as the time it took them to manage their anger.



Common Dosage for Processing Anger – 11 minutes

Average Dosage for Processing Anger – 17 minutes

Therapeutic Effects

The Issue melts away – 80.42%

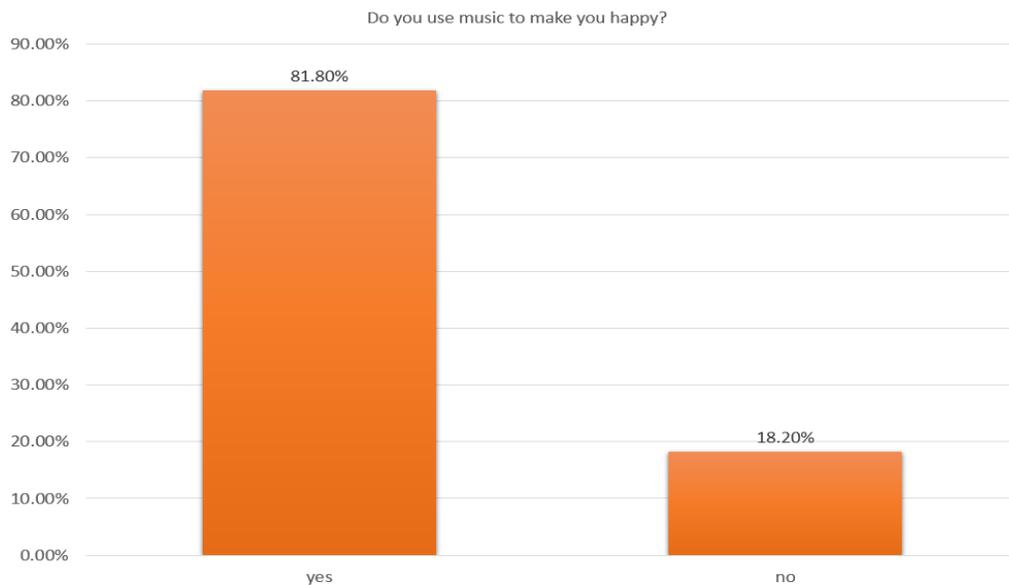
What made me angry before doesn't make me angry after listening to the music - 86.91%

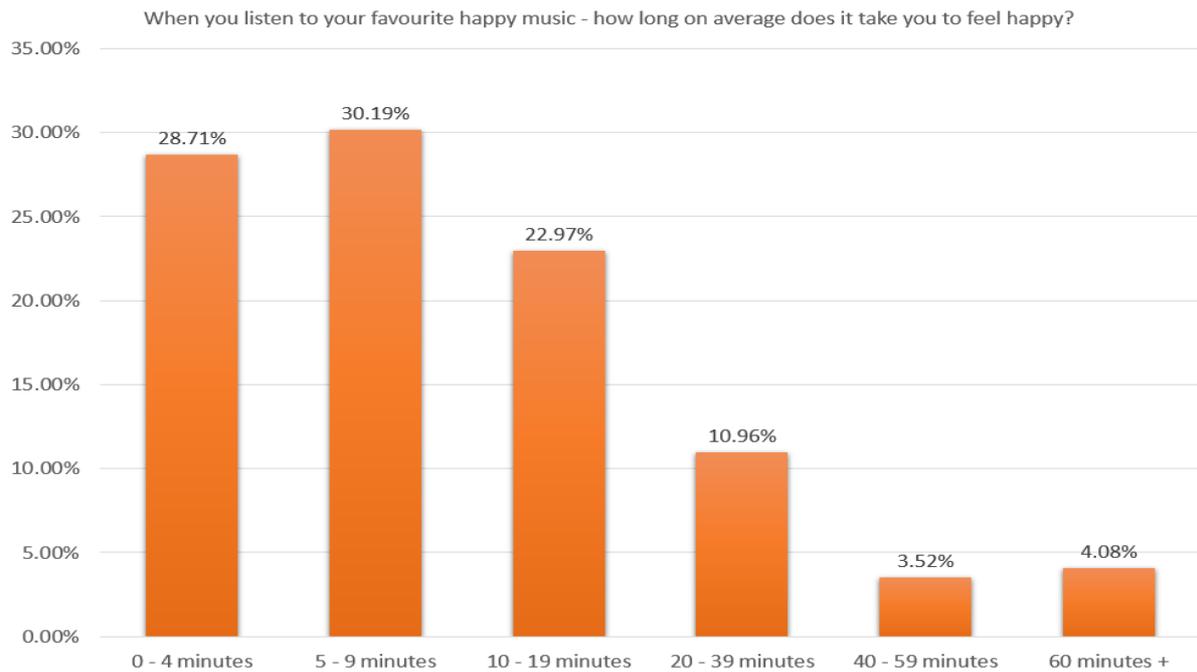
I'm less likely to get angry at new things that arise - 87.58%

I feel more able to deal with life's challenges - 92.49%

Happiness

Depression and low mood-state is very common. Whilst we were not testing specifically for depression, we were looking for information from participants who used music to help them to make them happy.^{13,14} Music interventions have been shown to be an effective alternative to conventional pharmaceutical treatments. Studies have shown that listening to self-selected happy music increases blood flow in the areas of the brain associated with reward and decreases blood flow to the amygdala – the area of the brain often associated with fear.¹⁵





Common Dosage for Happy Music – 5 minutes

Average Dosage for Happy Music – 14 minutes

Therapeutic Effects

A questionnaire was used to determine how happy people felt following listening to their music and to which degree the music affected them. Elements of the Oxford Happiness questionnaire was used to analyse the extent of happiness.

32.07% of people felt that they strongly agreed to being happier after listening to the music.

64.97% became happier

89.14% agreed to having more energy

64.97% said they laughed a lot more

86.31% agreed to being more satisfied with life

84.67% felt they had a more cheerful effect on others

82.35% agreed that they felt they were able to take anything on

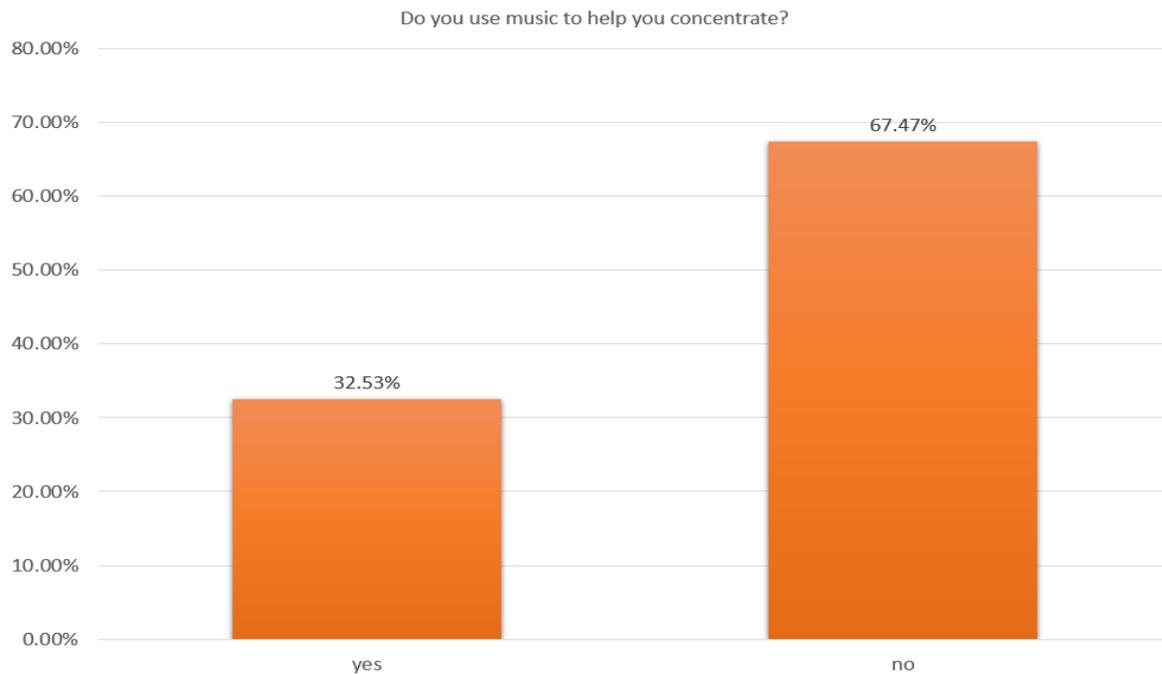
82.4% of people felt more in control of life

80.06% felt that being happier helped them to make decisions.

Concentration

Background music can be a distraction and a concern in the workplace. A study was conducted which looked at people taking tests whilst background music was playing. The study showed that compared to situations without background music, the likelihood of background music affecting test-taker attention performance is likely to increase with the degree to which the test-taker likes or dislikes the music. It is important not to select music that workers strongly like or dislike when making a selection of background music to avoid negatively affecting worker concentration.¹⁶

Do you use music to help you concentrate?



Overall 32.53% of people said yes to using music to concentrate. It was not surprising that this figure was on the low side given that on the whole, music can be distracting for some.

Common Dosage for Concentration – 11 minutes

Average Dosage for Concentration – 15 minutes

Therapeutic Effects

The most notable and relevant therapeutic effects were as follows

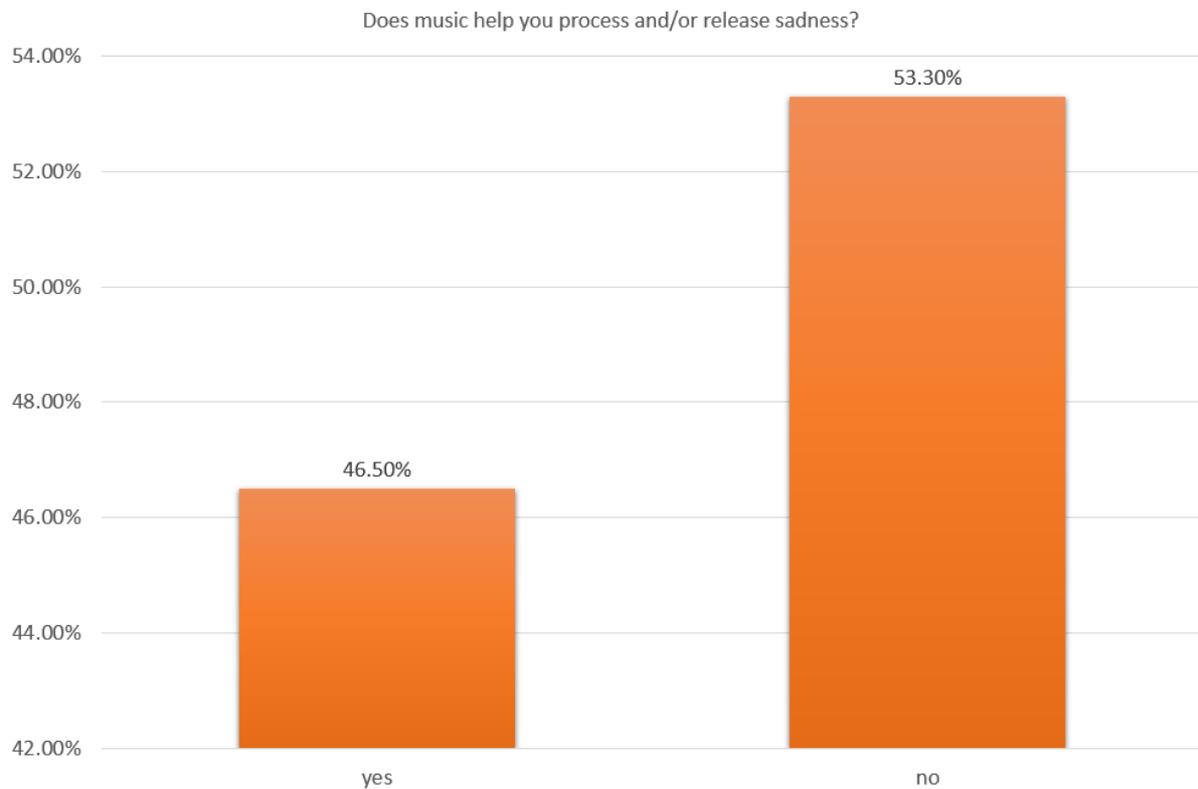
My mind became clear 81.04%

I feel as though I can do my job better 91.04 %

I can make decisions clearly 89.21%

Sadness

In the same way that music helps people to manage anger, music can be used to help people process and release sadness. A study was conducted comparing individuals' preferences for using music to process and/or release sadness. On the whole participants chose to use happy music as an antidote or treatment for their sadness N =128 took part in the study. The only time when participants did not choose sad music was when their 'sadness was ostensibly frozen (unresolved/mood-freeze condition)'¹⁷



Common Dosage for Releasing/Processing Sadness – 11 minutes

Average Dosage for Releasing/Processing Sadness – 16 minutes

Therapeutic Effects

83.80% - I felt as though I went through a process and came out the other side

84.96% - The issue that made me sad no longer had the same effect after listening to the music

84.05% - I feel less overwhelmed

91.23% - I feel a sense of relief and release

87.04% - I feel more emotionally stable

82.98% - I am less likely to be triggered by things that remind me of the issue

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