The Effects of Daily Music Listening on Levels of Depression and Anxiety in College

Students

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ABSTRACT

The purpose of the current study was to investigate whether listening to music on a daily basis has an effect on scores of depression and anxiety in college students. This study also looked at whether music preferences and gender had a correlation to levels of depression and anxiety. 120 college students between the ages of 18-46 from a randomised convenience sample took part in the present research study. Several correlation tests were run to examine the strength of relationship between the desired variables. Although pop music was the most popular, the results found no significance in any music preference. Similarly, there were no significant results which showed any gender differences in the relevant variables. However, there was significant evidence to show that hours spent per day increases levels of depression and anxiety in participants.

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INTRODUCTION

Mental illness is one of the leading health problems worldwide. In Ireland alone, 18.5 per cent or one in six – 84 million- people are recorded to have suffered or are suffering with a mental health disorder in 2016, including depression, anxiety, bipolar, schizophrenia and alcohol or substance abuse (Cullen, 2018). There is no evidence of significant gender or age differences in these statistics (Cullen, 2018). Mental disorders internationally account for 14% of disease (WHO, 2019). The financial aspect of mental health illness is costing the Irish economy €8.2 billion (OECD, 2018). Ireland has been categorised as being joint third out of 36 countries as having one of the highest rates of mental illness in Europe, according to the annual Health at a Glance Survey (OECD, 2018). Data collection and analyses from community studies for the European Union claims that 27% of the adult population, categorised as people aged between 18 and 65, have been effected by at least one mental health disorder (WHO, 2019). According to the Central Statistics Office (2017) 392 people, 80 women and 312 men, took their own lives in Ireland. These figures are shocking, however, 2016 showed a 2.4 per cent decrease in suicide rates. A 2010 study has shown psychotherapy has aided people who are suffering with depression (Sometsa et al., 2010), as well as other forms of treatment like antidepressant medication, such as Selective serotonin reuptake inhibitors (Kok, Heeren, & Nolen, 2012) and exercise.

Depression and Anxiety in the population

Depression is a one of the most commonly known mental illness as it effects over 300 million people of all ages worldwide (WHO, 2019). Depressive symptoms include low mood, lack of interest in hobbies or things that were once enjoyable, disturbed sleep, lack of concentration and feeling of guilt or low self-worth. Anxiety, although commonly associated

with depression, has many differences. Frequency of anxiety disorders are as high as 7.8-9.3 per cent (Ohayon et al., 2000). There are many different things that may cause a person's anxiety to be triggered. A person who may be stressed may experience anxiety as well, as this is a bodily response to stress. Some of these stressors or anxiety triggers may be caused due to interaction with strangers, attending new locations, family problems and phobias (HealthLine, 2018). Symptoms that are associated with anxiety are similar to that of depression. These symptoms include rapid breathing and heart rate, trouble sleeping either too much or not enough, and trouble concentrating. However, anxiety entails additional symptoms that depression does not exhibit, some of which are numbness, feeling of fear and panic, restlessness, sweating and dry mouth (HealthLine, 2018). Anxiety can also be treated with various forms of therapy and medications, including benzodiazepines (such as alprazolam) (Wetherell et al., 2005). If mental health is not looked after properly, it may lead to some more serious illnesses, including eating disorders, substance abuse (NIH, 2019), self- harming and suicide (Org, 2019).

Existing methods of treating depression and anxiety today are widely available. Each treatment plan is specifically designed to suit each person's needs and to maximise the rate of success. Both depression and anxiety can be treated in similar way, some of which being psychotherapies, including cognitive behavioural therapy and psychodynamic therapy and medications like antidepressants. Psychotherapies, however, have shown to have a 50 per cent success rate when helping people manage their depression and anxiety (Miller, 2015). In relation to antidepressants, studies have found a success rate of between 40 and 60 per cent (Depression: How effective are antidepressants?, 2017). According to the Anxiety and Depression Association of America (2019), there are 1 in 10 Americans using antidepressants,

it makes it the most popular form of medication used by people aged between 18 and 44 years.

Risk and Protective Factors

From the early stages of childhood can symptoms of mental health disorders be seen, with 50 per cent to 80 per cent of psychiatric disorders starting below the age of 18 years (Dooley, Fitzgerald, & Giollabhui, 2015). An abundance of research has been conducted examining the risk and protective factors associated with depression and anxiety, some of which include, socio-economic backgrounds, family background and their involvement, parental mental health and stressful life events (Kessler, Amminger, Aguilar-Gaxiola, Alonso, Lee, Ustun, 2007). Those with an unstable or problematic home life are susceptible to issues regarding mental health from a young age, which can also worsen with age. Excessive criticism, bullying and lack of support are all risk factors associated with mental illness, including depression and anxiety (Repetti et al. 2002; Shochet et al. 2006).

Similarly, anxiety has been recorded in children as young as 2 years (Huang, Cheng, Calzada, & Brotman, 2012). Anxiety can occur from such a young age due to phobias, separation, obsessive compulsive disorder and fear of injury. The long term effects of childhood anxiety can result in problems relating to school performance and anti-social behaviours (Ialongo, Edelsohn, Werthamer-Larsson, Crockett, 1995). It is therefore imperative that support and stable surrounding are suitably available to children from a young age in order to minimise mental health issues in the best way possible.

Mental Illness in College Students

College stress in Ireland is at an all-time high with a 46 per cent increase in students seeking help from college counsellors from 2015 and 2016 (AHEAD, 2017). Statistics from

2010 and 2019 showed an increase in students seeking help from 6,000 to 10,000, reported by both secondary students and third level students. Anxiety levels have also risen in Irish students, accounting for 40 per cent of all those seeking help were experiencing anxiety. This increase was seen in primary, secondary and third level students across the country. It is recommended by the Psychological Counsellors in Higher Education (2018) that one counsellor should only be responsible for 1,000 to 1,500 students. However, with increasing levels of depression and anxiety in students over the years, it is estimated that there is one counsellor for every 3,000 students (PCHEI, 2018). The funds available for mental health are not there and therefore, both students and counsellors are suffering as a result.

As stress is an almost inevitable side effect of college or university life, it is no surprise that mental illnesses account for one half of all illnesses in young adults in the United States (Hunt & Eisenberg, 2010). With such high rates of mental illness it is evident that there is a high correlation with suicide as it is the second leading cause of death among adults aged between 15 and 24 (Graduate Student Happiness & Well-Being Report, 2015). In an American survey involving counsellors in colleges, 95% of those surveyed reported that the number of students receiving help for mental illness is constantly growing with 70 per cent of counsellors reporting that students with severe mental health problems has increased further from the year previous (Earle, 2018). Students aged between 18-24 years are said to be more likely to suffer with depressive disorders (CDC, 2011), therefore those attending college within this age bracket are at a high risk of mental illness. Berkeley, California found that 45 per cent of graduated students reported dealing with emotional and stressful feelings that in turn had an impact on their well-being and had difficulties achieving their academic goals (Graduate Student Happiness & Well-Being Report, 2015). As a result, academic results have a tendency to struggle, due to issues with concentration and lack of interest and motivation to

achieve good grades. A 2010 study in America found that those attending high school and college are five times more likely to experience feelings of anxiety compared to those in the Economic Depression of the same age in the 1930's (AP, 2010). Many risk factors are associated with mental illnesses, some of which being, socio-economic status, social support, family support and genetics (Cuellar and Roberts, 1997). However, there is little research as to what factors in specific influence depression and anxiety, and in Irish college settings, such as workload, peer groups and academic achievement.

With statistics revealing such high levels of mental illnesses in the population, it is no surprise that students are a large sample of this population. A study conducted by Blanco et al., (2008) compared levels of psychiatric disorders to those attending college to those who are not attending college. Over a 12 month period, results found no significant difference between the two groups tested using the Alcohol Use Disorder and Associated Disabilities Interview Schedule—DSM-IV version. Within college sub groups, prevalence of mental illnesses tends to vary (Hasin et al., 2007), with results showing that male student are more likely to have suicidal notions (Silverman et al., 1997), yet female undergraduates are at greater risk of exhibiting symptoms of severe depressive and anxiety disorders (Eisenberg et al., 2007).

Students and Music

Students are immersed in music in some way or other throughout the day whether it is intentional or not. Music is a way of people expressing themselves in a personal way. Music is considered to be a crucial aspect of development in adolescence (Miranda & Claes, 2007).On average, in the United Kingdom and United states, people listen to music for about 2.5 and 4 hours a day. Listening to music has shown to improve mood and aid relaxation, aid

levels of productivity and increase cognitive functioning (Reach Out, 2018). While most research on music concentrates on the positive effects of music, there are also many studies that have shown that can be negatively influential on behaviour and emotions (Kämpfe et al., 2010). Although research by Kämpfe et al., (2010) found that background music was a distraction and therefore reduced productivity and performance. Yet additional research, for example the Mozart effect (Rauscher et al., 1993) has shown to have positive effects on cognitive functioning. The Mozart effect (Rauscher et al., 1993) shows that music with an upbeat tempo prompts increased mood levels and higher levels of arousal. Conversely, music with a lower tempo prompts a lower, more negative mood with lower levels of arousal (Riener et al., 2011). Not only does music increase skills associated with communication, but has also been shown that music can also activate parts of the brain that assist in understanding written and spoken language (Koelsch et al. 2004; Patel 2003).

Studies investigating the effects of background music have seen cognitive changes in memory (Ferreri et al., 2013), ability to learn a multiple languages (Kang and Williamson, 2013), mathematic problems (Hallam and Price, 1998) and visual perception skills (Angel et al., 2010). There is evidence to show that music listening is beneficial to those who are experience stress and symptoms of depression and anxiety. Muscles in the body relax which in turn causes your body to release tension which helps the mind relax and unload negative feelings both physical and psychological that one may or may not be aware of (Scott, 2018).

Music and Enhanced Performance

As research has found that music can aid performance and concentration while performing certain tasks (Huang & Shih, 2009), it is no surprise that some students prefer to listen to music while studying. However, some students opt for a setting with no audible

distraction and prefer an environment that offers little to no interruptions. Vocal music has been said to be more of a distraction than a benefit. This is due to the lyrics in the song becoming confused with incoming words for processing and therefore the brain has a harder time trying to categorise information correctly. Similarly, with those who are suffering with mental illness, the type of music you are listening to can impact their mood both negatively and positively (Ahmad, Nawaz, Rana & Afsheen (2015).

Music Preferences

In addition, the current study will examine if certain genres of music have an impact levels of depression and anxiety. Music preference refers to a psychological choice a person has for a certain type of music that effects their emotions and cognition.

An American study found that black students in high school and college had a preference for listening to music produced by black artists (McCrary, 1993). However, white students had less of a preference as to who had composed the music (McCrary, 1993). Research argues that certain music preferences have a higher tendency to be negatively influential to those who are listening to it, especially adolescents (Roberts, Dimsdale, East, & Friedman, 1998). Additionally, studies argue that heavy metal and goth music are in particular are linked with increased levels of self-harm and suicide (Young, Sweeting, & West, 2006). Interestingly, evidence points to the idea that music preference is a reflection of mental health rather than a cause of mental illnesses (North & Hargreaves, 2008)

Rationale and Aims

As it has been identified that music can reduce depressive symptomology, research should expand to account for how casual music listening could have a positive effect on people suffering with mental help issues and especially how it can combat and reduce mental

illness in college students. The intention of this study is to exactly that. Most known research in this area is conducted in America where college life is different in some aspects to that of college life in Ireland. As little research has been done in this field, it is imperative to examine whether something as simple as music listening, whether it be voluntary and intentional or background music, can be used to reduce levels of depression and anxiety in college students.

Most studies relating to music deal with the effects of music therapy rather than music listening (American Music Therapy Association, 2019). Music therapy is a process of using music, without any pharmaceutical assistance, to aid with physical, social, cognitive and emotional issues that people are facing. The needs of the patient are assessed by a qualified health expert and from there a plan is put in place for the patient to help them achieve their goals and intentions. From existing research regarding music therapy and its results, the aim of this current study is to build on existing information, the cognitive, physical, emotional and social and to see if what already is known can be reassigned to college students in Ireland, as well as building on research by investigating the positive effects music listening has on a college student rather than purposeful music therapy. It will also be examined if music preferences and genres play a role in lowering levels or depression and anxiety in college students. The current study will also examine if females exhibit lower levels of depression and anxiety when listening to music daily compared to males. The aim of this study in its entirety is to find a simple yet effective way to help people suffering with mental health issues. With the aid of something as simple and widely available as music, I am hopeful that there will be a visible difference in levels of depression and anxiety in students who listen to music on a daily basis, compared to those who do not.

Hypothesis 1 – Daily music listening reduces levels of depression and anxiety

Hypothesis 2 – Music preferences positively correlate with lower scores of depression and anxiety.

Hypothesis 3 – Females exposed to daily music listening exhibit lower levels of depression and anxiety than males.

METHODS

Participants

This study contained a total of 123 participants which were collected from 11th January until 31st January 2019. Three participants failed to complete the survey correctly, which brought the total sample of participants used to be 120 (F=75, M=47). It was obligatory that all participants who took part in this research must have been over the age of 18 years. All participants had to have been enrolled in full time college education in Ireland. The age of participants ranges from 18 to 46 years with a mean age of 23 (SD=22.141). Before partaking in this survey, participants were briefed about the purpose of this study and their data protection rights.

A convenience sampling method was used in order to collect participants for this research, as the survey used was distributed through various forms of social media including Facebook, Messenger, WhatsApp, Instagram and Reddit. This form of data collection allowed assorted results to be gathered on the many different types of music preferences enjoyed by students, the results of which are displayed in the results section of this research paper.

Design

The design of this research study is qualitative with the use of a correlational design which looks at the dependent variable of music listening and preference and the independent variable being the current mental state of participants, ie. depression and anxiety. This will be a cross-sectional study with full-time college students currently enrolled in college in Ireland.

Measures and Materials

As this was a qualitative study, the data used for this study was collected by means of surveys. The total number of questions asked was 97 which were divided into three sections per scale used. All three scales used were pre-existing. These were used in order to investigate music preferences (STOMP-R), music listening frequency and duration (MUSE,), and depression and anxiety (DASS). Each of these can be found below in the appendix section of this paper.

The survey used for this study was created using Google Forms. This platform allows uses to create their own surveys and distributed them to the required populations. All responses recorded by participants were automatically saved to the Google Forms online account. The link could be distributed to any social media platform to any sample population of choice. All responses were automatically transformed into statistics to allow for ease of analyses. The link to the survey was distributed through the various personal social media accounts of the researcher. The survey could only be completed by those who had access to a laptop, PC or smart device. There was no face-to-face contact with any participants for this research study.

Once opened, participants were first met by a cover page which contained a briefing form in the study. This sheet informed participants as to the purpose of the research, information involving anonymity, withdrawal from the study options, and how to get in touch with those coordinating the research. A debriefing sheet at the end of the survey was also provided. This contained appropriate information about helplines, services and organisations should any of the participants feel upset or were affected by any of the topics referred to in the survey.

Survey 1: STOMP-R. The STOMP-R Scale (Rentfrow, P. J., & Gosling, S. D) is a 23 item scale which is used to investigate music preferences. This scale is answered using a 7 point Likert scale ranging from 'Most likely' to 'Least likely'. The scale gives participants a choice of fifteen different genres of music. From the list, participants must then rate each genre of music using the Likert scale in accordance to which genre of music the most like and least like.

Survey 2: MUSE. The MUSE Scale (Chin & Rickard, 2012) is a relatively new scale that has been created to look a person's involvement with music. This scale contains a total of 32 questions relating to the participants music habits, including listening to music, and playing and performing music. Section A, labelled 'You and music', requires the participant to answer 8 questions using a 5 point Likert scale. Section B of the questionnaire deals with the person's participation in music. This is also measured by using a 5 point Likert scale.

Survey 3: DASS. The DASS scale was used for this study to investigate levels of depression and anxiety in college students. This is a self-report measure using 42 questions relating to a person's mood and emotions. This scale will also use a 4 point Likert scale.

Procedure

Once permission had been obtained from the NCI Ethics board to ensure it satisfied the PSI and NCI guidelines, data collected for this study was through online means only. The data obtained was protected with a password for research specific account, which only the researcher and supervisor for this project had access to. Before beginning the survey, participants were presented with a consent form which contained relevant information about the study including their involvement, withdrawal options and consent. Participants were informed that their identity would be kept anonymous and that no personal information was

required from them. It was estimated that the survey would take about 5 to 8 minutes to fully complete. It was encouraged that all questions are answered honestly. Should anyone wish to withdraw from the study they could do so at any time with no penalty.

The first question before the survey began was for participants to click should they wish to proceed. This is how consent was obtained from each participant. The survey began with the

In order to abide by the APA and NCI ethical guidelines a number of measure were taken to protect participants. Prior to completing the study all participants were informed sufficiently about the current research study and ways in which they could contact the researcher with any additional questions or queries they may have regarding the research. At no stage in the survey would any identifiable information about the participant be needed. Consent was obtained before the survey began as participants were unable to move forward in the survey otherwise. Participants were made aware that they would not be faced with a penalty of any kind should they wish not to take part or withdraw from the study. Additionally, for those who completed the survey, there was additional information about the data collected and details of organisations and services that they can reach out to if they were affected by any of the issues raised in the study.

Data Analysis

All data collected was analysed using IBM SPSS Statistic Data Editor (Presidion, 2015). Descriptive statistics were run for all categorical and continuous variables used in the study. This was done in order to obtain additional information regarding measures of variance, including standard deviation, mean and range. The validity of the STOMPR and DAS scales were measured using SPSS. This was done to test the validity and reliability of the scales used for the study.

Gender and yes/no response questions were recoded into 0 and 1. Similarly, for questions regarding the Likert scale, the responses were recoded appropriately. This was to aid with comprehension of the data output.

For the purpose of testing hypothesis 1, a bivariate correlation analysis was conducted. This generated results about the strength of relationship between the four variables used; hours per day, times per week, total depression and total anxiety.

A bivariate analysis test was also used to test hypothesis 2. This was conducted on each music genre given and total scores of depression and anxiety. The output generated information regarding significance and correlation strength.

Hypothesis 3 was tested by using univariate analysis of variance with between subject groups. These were gender and total anxiety and total depression. The results from this test produced information about significance.

RESULTS

Frequencies

Table 1

Frequencies for the current sample of college students on each categorical demographic variable (N = 120)

Variable	Frequency	Valid Percentage
Gender		
Male	47	39.2
Female	73	60.8
Daily Listening		
Yes	116	96.7
No	4	2.2
Hours Per Day		
Less than an hour	13	7.0
1-2 hours	59	31.9
3-4 hours	38	20.5
5-6 hours	5	2.7
6 and more	5	2.7
Times Per Week		
1-2 times	1	0.5
3-4 times	6	3.2
5-6 times	11	5.9
6 and more times	102	55.1

Descriptive

      The descriptive tests that were run using SPSS were done to gain a better understanding on the samples ranges, mean scores and standard deviations. The ages of participants range from 18-46 years, as can been seen in figure 1 and table 2 below. Two participants were excluded from the data due to incorrectly inputted ages.

Figure 1
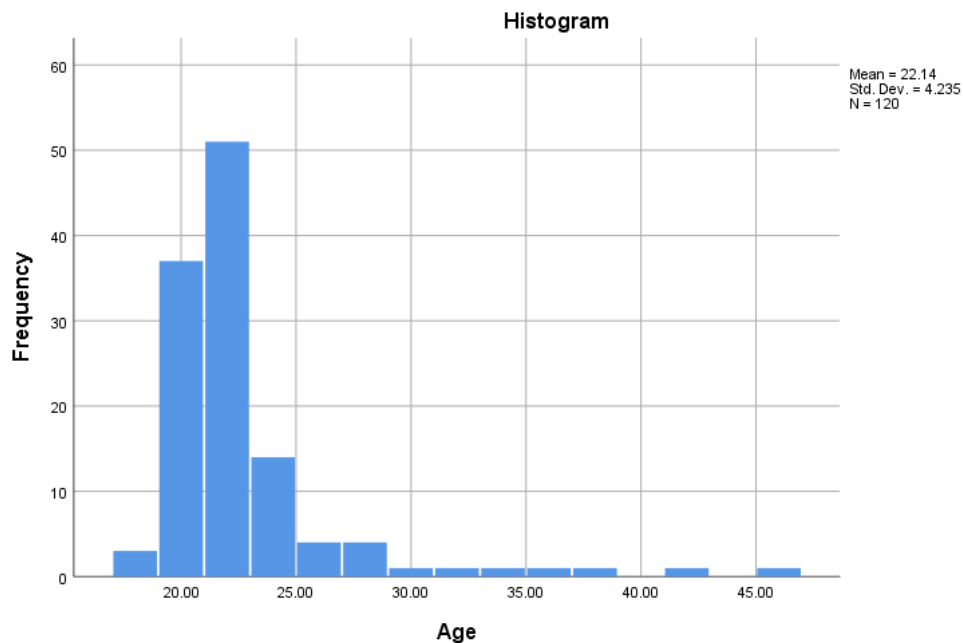
      Participants were required to record their most preferred music genre by using a 7 point Likert Scale with 1 being 'least likely' and 7 being 'most likely'. All fifteen music genres were analysed through descriptive statistics with the highest results being produced by Rap/Hip Hop (M=4.86, SD=1.76) and lowest scores by Heavy Metal (M=2.51, SD=2.02).the remaining genres statistics can be viewed in the below table 2.

The validity of the scales used in the study were measured. The validity measure for the STOMPR scale measured r= 6.26. The DAS scale's validity was recorded as being r=.979. These results show that there is there is very good reliability for these scales.

Table 2

Descriptive statistics of all continuous variables

	Mean (95% Confidence Intervals)	Std. Error Mean	Median	SD	Range
Age	22.14 (21.38-22.91)	.39	21	4.24	18-46
Alternative	4.68 (4.37-4.99)	.16	5	1.73	1-7
Classical	3.03 (2.72-3.33)	.15	3	1.69	1-7
Dance Electronic	4.27 (3.95-4.58)	.16	5	1.73	1-7
Heavy Metal	2.51 (2.14-2.87)	.18	2	2.02	1-7
Jazz	2.98 (2.67-3.27)	.15	3	1.65	1-7
New Age	3.21 (2.97-3.46)	.12	3	1.35	1-7
Pop	4.83 (4.49-5.16)	.17	5	1.84	1-7
Punk	3.32 (3.01-3.63)	.16	3	1.72	1-7
Rap/HipHop	4.85 (4.54-5.18)	.16	5	1.76	1-7
Reggae	3.44 (3.14-3.74)	.15	3	1.65	1-7
Rock	4.52 (4.15-4.88)	.18	5	2.01	1-7
RnB	4.40 (4.07-4.72)	.16	5	1.78	1-7
Soundtracks/ThemeSongs	4.40 (4.05-4.75)	.18	4	1.96	1-7
World	2.85 (2.59-311)	.13	3	1.45	1-7

Country	2.78 (2.49-3.08)	.15	3	1.65	1-7

A test for normality was conducted for the fifteen music genres. This which concluded that all genres were unevenly distributed (p=.000).

Inferential Statistics

Three correlational tests were used in this study. These were used as a way of uncovering the relationship between variables that were discussed in the hypotheses. The Pearson correlation test was used to determine the strength of the relationship between the variables.

A bivariate analysis was conducted to test if the frequency of listening to music and hours spent listening to music correlated with levels of depression and anxiety. The outcome was as follows. There was no significant evidence to show that frequency in a week correlated with levels of depression (r=151, N=120, p=.099) and anxiety (r=.215*, N=120, p=.018). However, there is significant evidence to show that the hours spent in a day listening to music increase levels of depression (r=.331**, N=120, p=.000) and anxiety (r=.352**, N=120, p=.000).

Two univariate Analysis of variance was performed on (1) gender and total scores of depression and (2) Gender and total scores of anxiety. The results generated from the first two-way between-groups ANOVA tested to see if there was a significant correlation between gender and total scores of depression. There was no significant evidence that gender effected levels of total scores of depression, F (1, 120) = .374, p = .542. Similarly, there was also no

significant effect between gender and total levels of anxiety, F (1, 120) = 1.13, p = .291. See

tables 3 and 4.

Table 3

Univariate analysis of variance on gender and total depression scores

Source	df	SS	MS	F	p
Between Groups	1	18.80	18.80	.374	.542
Total	120	15210.00			

Table 4

Univariate analysis of variance on gender and total anxiety scores

Source	df	SS	MS	F	p
Between Groups	1	40.81	40.81	1.125	.291
Total	120	11329.00			

Fifteen bivariate correlations were performed on each genre of music. This was to

understand whether there was any significance with participant's levels of depression and

anxiety, depending on the type of music they listened to. From the results produced, there is

no significance in the type of music a person listens to and levels of depression and anxiety.

The results from this test can be found in table 5.

Table 5

Correlations between all continuous variables.

Variables	1	2	3
1. Alternative	1		
2. Total Depression	.125	1	
3. Total Anxiety	.063	.681**	1
1. Classical	1		
2. Total Depression	.037	1	
3. Total Anxiety	-.011	.681**	1
1. Dance/Electronic	1		
2. Total Depression	.027	1	
3. Total Anxiety	.024	.681**	1
1. Heavy Metal	1		
2. Total Depression	.146	1	
3. Total Anxiety	.158	.681**	1
1. Jazz	1		
2. Total Depression	-.078	1	
3. Total Anxiety	.06	.681**	1
1. New Age	1		
2. Total Depression	-.151	1	
3. Total Anxiety	-.101	.681**	1
1. Pop	1		
2. Total Depression	-.041	1	
3. Total Anxiety	-.114	.681**	1

1. Punk	1		
2. Total Depression	.052	1	
3. Total Anxiety	.112	.681**	1
1. Reggae	1		
2. Total Depression	-.059	1	
3. Total Anxiety	.063	.681**	1
1. Rap/HipHop	1		
2. Total Depression	-.088	1	
3. Total Anxiety	.102	.681**	1
1. Rock	1		
2. Total Depression	.016	1	
3. Total Anxiety	-.120	.681**	1
1. RnB	1		
2. Total Depression	-.120	1	
3. Total Anxiety	-.029	.681**	1
1. Soundtracks/Themes	1		
2. Total Depression	-.048	1	
3. Total Anxiety	.031	.681**	1
1. World	1		
2. Total Depression	.070	1	
3. Total Anxiety	.134	.681**	1
1. Country	1		
2. Total Depression	-.015	1	
3. Total Anxiety	-.010	.681**	1

Note. Statistical significance: *p < .05; **p < .01; ***p < .001

DISCUSSION

The present research study set out to investigate the effects daily music listening has on college students mental health, specifically depression and anxiety. Gender differences and the type of music genre people listen to was also researched in relation to depression and anxiety. There was no significant evidence to show that music preferences are related to mental illnesses, including depression and anxiety. Similarly, the outcome of this projects also revealed that there were no significant differences in males and females and their scores of depression and anxiety. The results of the study found that there is a significant correlation between the hours a person spent listening to music in a day with increased levels of depression and anxiety.

Exposure to Music

In accordance with a study conducted on a British sample and an Australian sample in 2014, participants from all three studies reported listening to music on average between 1-2 hours a day (49.6%) (Mcferran et al., 2014; North, Hargreaves, & O'Neill, 2000). Although methods of accessing music has become easier in recent years, these results remain relatively the same. The present study hypothesised that daily music listening reduces levels of depression and anxiety in college students however, it is also interesting to note that there was no significance in the amount of days per week a person listened to music. The results from the current study found that there were increased levels of depression and anxiety in participants who listened to music more frequently. Although, these were not the results expected, there has also been research that have found similar results. The results from the current research coincide with results of a 2011 study. The results of the study reported that exposure to popular music is a positively associated factor to Major Depressive Disorder

(MDD) (Primack et al., 2011). The study also found that there was an 80% higher risk of depressive symptoms when the level of music use increased (Primack et al, 2011) With an average use time of 10 hours a day in teens and adolescents (Primack et al., 2011) there is continuous and repeated extreme exposure to violent messages, including music. In turn, this can cause and/or increases levels of depression (Lakdawalla, Hankin, & Mermelstein, 2007). These findings correlate to the findings of the current study.

Music Preference

The present study hypothesised that music genres correlated with depression and anxiety levels, however there were no significant results found to show this. Fifteen genres of music were explored, rap and hip-hop were considered the most popular, while heavy metal was least popular. With research providing evidence that music is beneficial on both mental well-being and cognitive improvements (Sarkamo, et al., 2008), research has also uncovered that not only does music have a positive effect on emotions and cause feelings of happiness, it has been found that it can also affect mood in a mood negative way and induce feelings of sadness (Hunter, Schellenberg & Schimmack, 2010). Similarly, an Australian study examined the relationship between self-reported mood and the participant's music preference and found that adolescents purposefully changed their music preference in accordance to their mood, resulting in improved mood levels (Mcferran, Garrido, O'Grady, Grocke, & Sawyer, 2014). However, this same study found no correlation between any particular genre of music and an increase in mood (Mcferran et al., 2014). These results are similar to the results obtained in the present study.

The results gained from this research found that 'rap' and 'hip-hop' music was the most popular among the sample used, with a mean score of 4.85 (SD= 1.76). Similarly, a

2013 study found that 20.9 per cent (N= 140) of their sample choosing 'rap' and 'hip-hop' as

being most popular. However, unlike the present study, a recent study that also used the

STOMP scale, found that 'pop' music was the most popular music chosen by their sample

(Hunter, Schellenberg & Schimmack, 2010). The results of their found gathered a mean score

of 5.90 (SD= 1.18) (Hunter et al., 2010). The sample of this study, however, was much

smaller than the present research project, as their study consisted of 49 undergraduates.

Gender Differences

The results from the current study did not uncover any correlation between genders

and levels of depression and anxiety. These results are contrary to a lot of previous research

that has been conducted in this area. An abundance of research conducted on depression and

anxiety have found that females are more likely to fall victim to depressive symptomology

(Altemus, Sarvaiya, & Epperson, 2014). However, the 2018 statistics on Levels of depression

and anxiety in Ireland, there was also no significant evidence to show that there were

differences in levels of depression and anxiety in males and females (Cullen, 2018). As this

2018 study and the current study were both set in Ireland, there is reason to believe that the

results obtained by the present study give an accurate representation of the distribution of

depression and anxiety in males and females, however, further research is required. The

reason why the results of the current study are different to a lot of other research that has

looked at gender differences in mental illness may be due to the fact that the sample size of

this study is quite small in comparison to other studies.

Limitations

Like with every study, this present research project also faced some limitations. The

sample used for the purpose of this study was relatively small, consisting of only 120

participants. In order to generalise the results a larger study is needed for future projects. Similarly, the sample consisted of a higher ratio of females to men. The questionnaire used for the purpose of collecting data was a self-report measure. This could result in biased answers from participants and answers that may not be solely honest. As a result the significance of the data carries less validity. The questionnaire was only distributed through online platforms. These meant that anyone without access to a PC, laptop or smart phone was not able to partake in the study. Face-to-face survey distribution would be useful for future studies to increase sample size and reduce exclusion.

It should be taken into account that music genres may not have been sufficiently defined as some artists may be categorised in more than one genre of music. As this was a self-report measure, one person's definition of a genre of music may differ to another, therefore, there may be discrepancies in the types of music people listen to and what was selected in the survey.

Conclusion

Although the results of this research project were surprising in comparison to other research conducted in a similar area, there is concrete evidence to show that depression and anxiety is prevalent in college students today and is a growing problem not just in Ireland but worldwide. The present study set out to see if daily music listening had a positive correlation with levels of anxiety in college students. The results found that there is a significant correlation between hours spent a day listening to music and increased levels of depression. These results were unexpected and to not correspond with most previous research that has been conducted in this area.

As the research regarding music listening is quite limited, further research is needed to expand on the little existing knowledge of music listening and the effects it has on mental illness. Similarly, to improve on the current research project it should involve a larger sample size with and even ratio of males to females, and have more ways of distributing of the questionnaire, including face-to-face distribution.

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APPENDIX

Participation Requirements

Must be over the age of 18 years

Must be attending college in Ireland

Information Sheet

Hello, my name is Isabelle Flanagan and I am a final year BA Psychology student in the National College of Ireland. I would really appreciate it if you could spare 10 minutes to complete my questionnaire.

The questions in the survey relate to the effects listening to music on levels of depression and anxiety in college students. All questions must be answered if you decide to participate in the study. Once the survey has been filled out the information provided will be used for research purposes. All information gathered from the survey will be kept anonymous and will only be accessed by the researcher and their supervisor. None of the data collected will be distributed to an outside body. It will also not be possible to gain access to your personal data once submitted as all surveys will be submitted anonymously.

If you have any questions, feel free to contact me (x16355001@student.ncirl.ie) or my supervisor, Dr, Matthew Hudson (Matthew.Hudson@ncirl.ie).

Consent Form

I voluntarily agree to participate in this research study. I understand that even if I agree to participate now, I can withdraw at any time or refuse to answer any question without any consequences. I have had the purpose and nature of the study explained to me in writing and I have had the opportunity to ask questions about the study. I understand that all information I provide for this study will be treated confidentially. I understand that in any report on the results of this research my identity will remain anonymous and that none of my answers will be released with my personal details attached. I understand that I am free to contact any of the people involved in the research to seek further clarification and information. The proper contact details have been provided for me in this questionnaire should I need them.

Please check the box if you wish to proceed.
Agree ☐

Demographic Questions

Age _____
Gender   Female
                                                                     Male
                                                                     Prefer not to say

Do you listen to music daily?   Yes
                                                                     No

STOMP-R
Music Genre Preferences
Please rate how strongly you enjoy listening to the following music genres

Dislike Strongly 1   2   3   4   5   6   7 Like Strongly

Alternative	1	2	3	4	5	6	7
Classical	1	2	3	4	5	6	7
Dance/Electronic	1	2	3	4	5	6	7
Heavy Metal	1	2	3	4	5	6	7
Jazz	1	2	3	4	5	6	7
New Age	1	2	3	4	5	6	7
Pop	1	2	3	4	5	6	7
Punk	1	2	3	4	5	6	7
Rap/HipHop	1	2	3	4	5	6	7
Reggae	1	2	3	4	5	6	7
Rock	1	2	3	4	5	6	7
R&B	1	2	3	4	5	6	7
Soundtracks/ ThemeSongs	1	2	3	4	5	6	7
World	1	2	3	4	5	6	7
Country	1	2	3	4	5	6	7

MUSE Questionnaire

How you use music _____(optional)

On average, how often do you listen to music in a week?   Less than once a week

1-2 times a week

3-4 times a week

5-6 times a week

More than 6 times a week

On average, how many hours do you purposely listen to music a day? (As opposed to music in the environment you have no control over)

Less than an hour a day

1-2 hours per day

3-4 hours per day

5-6 hours per day

More than 6 hours a day

Do you play an Instrument?   Yes

No

If 'yes' how many hours a day did you play/practice this instrument? _____

How long since you last regularly played a music instrument? (including singing, practice, and performance)

Less than a week ago

Less than a month ago

Less than a year ago

Between 1 and 5 years ago

Between 5 and 10 years

ago

More than 10 years ago

What is the highest level of formal music training you have received?

None

Primary school classes

Secondary school classes

Tertiary Undergraduate training

Postgraduate training

Music is often a source of inspiration for me   0   1   2   3   4   5

I often play challenging pieces	0	1	2	3	4	5

There is a greater connection with my friends when we like the same music

	0	1	2	3	4	5

Music provides me with a good pace for exercise

	0	1	2	3	4	5

Music often takes away the tension at the end of the day

	0	1	2	3	4	5

Performing music is emotionally rewarding to me

	0	1	2	3	4	5

I often listen to new compositions	0	1	2	3	4	5

I often look forward to attending music practices with my friends

	0	1	2	3	4	5

Certain types of music help me think	0	1	2	3	4	5

Mastering this piece of music gives me a greater recognition as a performer

	0	1	2	3	4	5

Having similar taste in music often helps me relate better to my peers

	0	1	2	3	4	5

Dance is an expression of my feelings	0	1	2	3	4	5
I often listen to music when I'm feeling down	0	1	2	3	4	5

I often get recognition from my friends for playing in a band

	0	1	2	3	4	5

I am able to make more friends when we like the same type of music

	0	1	2	3	4	5

Listening to music whilst exercising often helps me exercise for longer

	0	1	2	3	4	5

Specific types of music make me feel better	0	1	2	3	4	5

Being able to improvise whilst playing music gives me a great sense of satisfaction

	0	1	2	3	4	5

Dancing keeps me fit	0	1	2	3	4	5

I feel good when my performance is applauded

                                              0   1   2   3   4   5

Practice helps me improve my music playing skills

                                              0   1   2   3   4   5

I use a particular type of music to get me through tough times

                                              0   1   2   3   4   5

Music performance demonstrates my knowledge of music theory

                                              0   1   2   3   4   5

Music improves my physical endurance level   0   1   2   3   4   5

DASS

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

Did not apply to me at all 0   1   2   3   Applied to me very much, or most of the time

I found myself getting upset over trivial things   0   1   2   3

I was aware of dryness in my mouth   0   1   2   3

I couldn't seem to experience any positive feeling at all

                                              0   1   2   3

I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)   0   1   2   3

I just couldn't seem to get going   0   1   2   3

I tended to over react to situations   0   1   2   3

I had a feeling of shakiness (eg, legs going to give way)

                                              0   1   2   3

I found it difficult to relax   0   1   2   3

I found myself in situations that made me so anxious I was most relieved when they ended

                                              0   1   2   3

I felt that I had nothing to look forward to   0   1   2   3

I found myself getting upset rather easily	0	1	2	3
I felt that I was using a lot of nervous energy	0	1	2	3
I felt sad and depressed	0	1	2	3

I found myself getting impatient when I was delayed in any way (eg, elevators, traffic lights, being kept waiting)

	0	1	2	3
I had a feeling of faintness	0	1	2	3

I felt that I had lost interest in just about everything

	0	1	2	3
I felt I wasn't worth much as a person	0	1	2	3
I felt that I was rather touchy	0	1	2	3

I perspired noticeably (eg, hands sweaty) in the absence of high temperatures or physical exertion

	0	1	2	3
I felt scared without any good reason	0	1	2	3
I felt that life wasn't worthwhile	0	1	2	3
I found it hard to wind down	0	1	2	3
I had difficulty in swallowing	0	1	2	3

I couldn't seem to get any enjoyment out of things I did

	0	1	2	3

I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)

	0	1	2	3
I felt down-hearted and blue	0	1	2	3
I found that I was very irritable	0	1	2	3
I felt that I was close to panic	0	1	2	3

I found it hard to calm down after something upset me

	0	1	2	3

I feared that I would be "thrown" by some trivial but unfamiliar task

	0	1	2	3

I was unable to become enthusiastic about anything

	0	1	2	3
I found it difficult to tolerate interruptions to what I was doing	0	1	2	3
I was in a state of nervous tension	0	1	2	3
I felt I was pretty worthless	0	1	2	3
I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
I felt terrified	0	1	2	3
I could see nothing in the future to be hopeful about	0	1	2	3
I felt that life was meaningless	0	1	2	3
I found myself getting agitated	0	1	2	3
I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
I experienced trembling (eg, in the hands)	0	1	2	3
I found it difficult to work up the initiative to do things	0	1	2	3

Debriefing Sheet

Thank you for taking the time to complete this survey on the effects of music listening on depression and anxiety. If you wish to submit your responses, please press the submit button below. After you have submitted the survey, your data will be anonymous and will not be traceable to you.

If you do not wish to proceed with the submission, please close the page.

If you have any questions, feel free to contact me (x16355001@student.ncirl.ie) or my supervisor, Dr, Matthew Hudson (Matthew.Hudson@ncirl.ie).

If you feel that the issues raised in this survey have affected you in anyway, please find below appropriate help lines should they be needed.

Useful services that may be needed

Samaritans

•   Free 24hr helpline: 116 123

Email: jo@samaritans.ie

Text: 087 2 60 90 90 (Republic of Ireland, standard message rates apply)

Pieta House

•   Free 24hr helpline: 1800 247 247

Email: mary@pieta.ie

Text: text the word "Help" to 51444 (standard message rates apply).

Aware

•   Free Support Line: 1800 80 48 48

Email: supportmail@aware.ie (response within 24 hours)
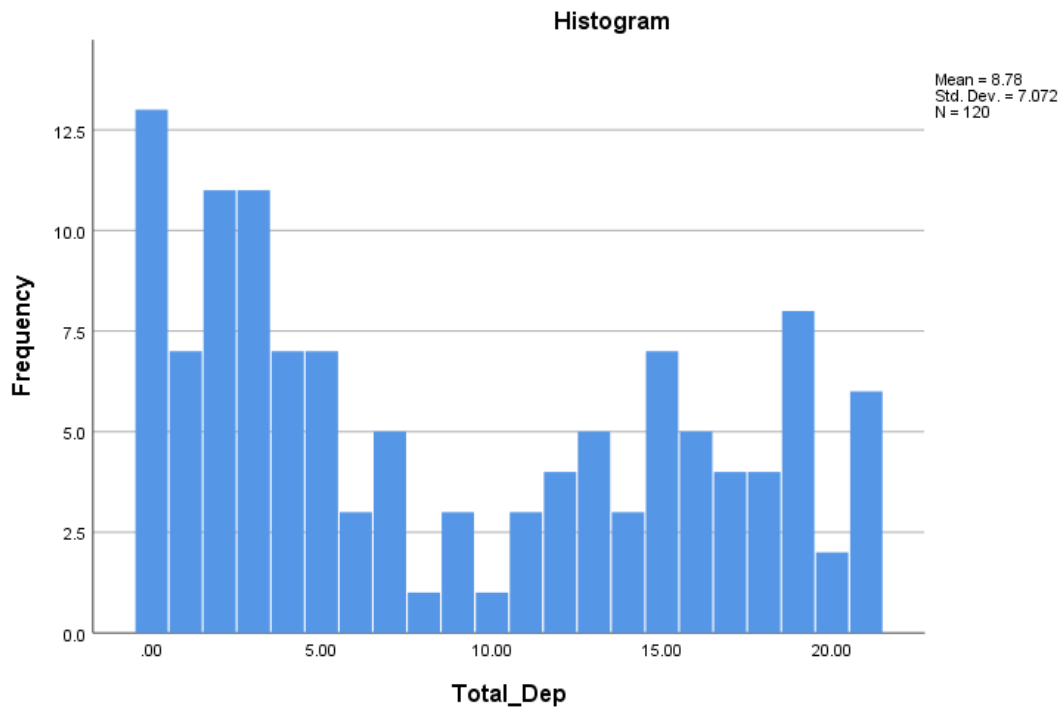
Figure 2

Distribution of levels of depression

Figure 3

Distribution of levels of anxiety