

**A Study of the Effect of Music on Wellbeing and Emotion Between Age Groups**

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## Table of Contents

Table of Contents .....	1
Acknowledgements .....	4
Abstract .....	5
1 Introduction .....	6
2 Literature Review .....	8
2.1 Music and Human Interaction .....	8
2.1.1 Music Preference .....	9
2.1.2 Musical Engagement .....	11
2.2 Effects of Music .....	12
2.2.1 Emotion .....	12
2.2.2 Happiness .....	13
2.2.3 Happy Music .....	13
2.2.4 Sad Music .....	14
2.2.5 Music as a Therapy .....	15
2.2.6 Music Therapy and Wellbeing .....	16
2.3 Rational/Aims .....	19
Hypothesis 1 .....	19
Hypothesis 2 .....	19
Hypothesis 3 .....	19

2.4	Conclusion of Literature Review .....	19
3	Methodology.....	20
3.1	Participants .....	20
3.2	Design.....	20
3.3	Materials & Measures .....	21
3.3.1	Questionnaire – Section 1 .....	21
3.3.2	Questionnaire – Section 2 .....	22
3.3.3	Questionnaire – Section 3 .....	23
3.3.4	Questionnaire – Section 4 .....	24
3.4	Procedure.....	24
3.5	Ethical Considerations.....	25
3.6	Analysis.....	26
4	Results .....	27
4.1	Descriptive Statistics .....	28
4.1.1	Music Genre.....	28
4.1.2	Effect of Music on Emotion.....	30
4.1.3	Musical Involvement and Importance .....	32
4.1.4	Inferential Statistics .....	33
5	Discussion.....	35
5.1	Introduction .....	35
5.2	Music Genre .....	35

5.3	Hypothesis.....	37
5.4	Implications.....	39
5.5	Limitations .....	39
5.6	Further Research .....	40
5.7	Conclusion.....	40
6	References .....	41
7	Appendix .....	45
7.1	Appendix 1.....	45
7.2	Appendix 2.....	48
7.3	Appendix 3.....	49

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## Abstract

233 male and female participants between the ages of 18 – 75 from an Irish sample took part in the present research. Results found that age was not of primary influence in the effect with which music had on an individuals' wellbeing and emotional response to music. However, it was found that age does play some role in the effect with which music has on wellbeing and emotion, in particular for younger participants. Though age is not primary in determining an individuals' response to music, further research is required in this field to determine if the relationship between, music, wellbeing and emotion differs for younger and older participants.

**Keywords:** music, wellbeing, emotion, age, music preference, music genre.

## 1 Introduction

Music has a remarkable ability to conjure up emotions in individuals. According to Pereira, Teixeira, Figueiredo, Xavier, Castro and Brattico it has been found to be one of “the most pleasurable human experiences”. It has the ability to evoke feelings of happiness, sadness and even fear to name but a few (Goycoolea, Levy & Ramirez, 2013). It can even be said that music has a mood altering effect on people, sometimes positive, and sometimes negative. But the correlation between music and emotion is a complex one. For each individual will have differing responses to music based on their own individual musical preference. It can produce different emotions for different individuals and even different emotions in the same individual at different times (Rana & Akhtar, 2011).

For the purposes of this study, a musical experience can include (but is not limited to), listening to live music, listening to pre-recorded music, playing a musical instrument and/or singing. Whether an individual chooses to listen to music, play music or sing, the music can have differing effects on people. One reason for this is perhaps that individuals engage with music both consciously and subconsciously, both actively and passively. The level of exposure to music may be by choice or indeed without choice. When an individual organises their music collection on a shelf or on a music device such as an mp3 player and consciously selects a preferred track to listen to, they are actively engaging in their music by organising it, choosing a preferring track and listening to that piece of music (Greasley, Lamont & Sloboda, 2013). Comparatively the exposure to music may also be thrust upon an individual through daily activities. Individuals are indirectly exposed to music in public spaces. For example: a supermarket playing music over an intercom system. Also through the medium of radio, television, a church choir, or even a child’s toy, individuals are exposed to music in their

daily lives whether they consciously choose to actively listen or whether it is thrust upon them and they passively engage with it.

With technology so advanced in today's world, individuals have access to the widest range of music than ever before (Greasley & Lamont, 2006). Additionally, they can listen to their favourite song wherever and whenever they wish at the touch of a button due to the technological advances in music devices such as the availability of portable MP3 players (Skandland, 2013). Individuals can listen over and over again to their favourite music through the means of a 'repeat' function on an mp3 player or similar device for hours on end. The combination of lyric, instrument, beat, tempo, volume and rhythm all contribute greatly to the overall effect of the music produced. It is the effect the musical sound has on individuals that can help determine whether they like a piece of music or not. The interpretation of that musical sound can contribute to the emotional response it triggers within the human body.

For this reason, a carefully selected piece of music to accompany a special occasion can have quite a profound effect on the moment. For example, a piece of music considered so beautiful can greatly enhance a joyous occasion. That music can dramatically enhance a joyous occasion such as a wedding, the moment a bride walks down the aisle. It can emotionally move individuals so greatly that those present are often brought to tears. This, it can be said is the power of music at work and the present research seeks to study the effect to which music has on individuals wellbeing and emotion.

## 2 Literature Review

A review of previous research in the area of music, wellbeing and emotion will be undertaken to present previous research conducted in this area and also to establish the aim of the present study.

### 2.1 Music and Human Interaction

Music as defined by The Macmillan Encyclopedia is “The art of organizing sounds, which usually consist of sequences of tones of definite pitch, to produce melody, harmony, and rhythm”. Perhaps music is much more to individuals than this technically slanted definition may suggest. It is difficult to encompass just exactly what music means to all individuals because it can be such an individual experience. The American born neuroscientist Daniel Levitin described his experience of listening to music through headphones as making music more personal for him. “It was suddenly coming from inside my head, not out there in the world” (Levitin, 2007, p.2). This suggests that when listening to music through earphones, it has an enveloping effect for an individual as opposed to when listening to music without earphones, thus creating a different effect for the listener.

It can also be described as an outlet or a resource to which an individual can absorb themselves into both creativity and emotionally. The creation of music can be a very private, individual creation. For example, when a composer writes music, that creation comes directly from the composers mind and body. Emotion pours from fingertip to piano or from deep within the diaphragm to vocal cords producing sound in the form of song. Similarly, when a lyricist writes lyrics the words are often so personal when the lyricist relays a personal experience through song.

In contrast, music is also one of the mostly widely shared art forms and is commonly shared within group settings at events such as weddings, funerals or parties. It connects individuals who attend live concerts or those who listen to the musical harmony of a live orchestra. In 2014, Baltes and Miu conducted a study at the Romanian National Opera House on the emotional response of people towards a live music performance. One hundred and twenty participants took part in the study during a performance of Giacomo Puccini's "Madame Butterfly" (Baltes & Miu, 2014). Participants completed a TEQ (Toronto Empathy Questionnaire) and a VVIQ (Vividness of Visual Imagery Questionnaire) during the week of the performance. An hour before the performance participants were instructed to complete a PANAS (Positive and Negative Affective Schedule). They were also provided with three copies of a GEMs. GEMs refers to average ratings that belong to four emotional factors. The factors that are measured are sublimity, vitality, unease and chills (Baltes & Miu, 2014). The hypothesis set out for this study was "that the mood before the performance would modulate emotional experience in a valence-specific manner." (Baltes & Miu, 2014). Analysis of the results found the hypothesis to be supported with links found between three key individual differences (empathy, visual imagery, and mood) and emotional reactivity to music (Baltes & Miu, 2014).

### **2.1.1 Music Preference**

It can be said that individuals are predisposed to their taste in music, long before they are born. Daniel Levitin, wrote of Alexandra Lamont's research conducted on the music preference of 1 year olds in his bestselling book 'This Is Your Brain On Music: Understanding a Human Obsession', that children exposed to a piece of music whilst in the womb showed signs of musical preference for that same piece of music approximately 1 year after birth. This is despite not having been exposed to that same piece of music since prior to birth (Levitin, 2007, p.224). Possible reasons for this could be due to the fact that the

foetus has fully functioning auditory capabilities at approximately 20 weeks gestation (Levitin, 2007, p.223) and also that the baby has capabilities to retrieve stored memories of events experienced prior to birth (Levitin, 2007, p.227).

Despite Lamont's research finding evidence of infant's predisposition to certain pieces of music, this does not necessarily mean the same individual will continue to show preference for the same piece of music throughout the course of their lifetime. Music preference has been found to change over the course of one's lifetime. This was found to be true in a recent study conducted in 2013 by Bonneville-Roussy, Rentfrow, Xu and Potter on the individual music preferences of adults from adolescence through to middle-adulthood. Researchers found that preference for "the Mellow, Unpretentious, and Sophisticated dimensions increased with age, whereas preferences for Intense and Contemporary declined" (Bonneville-Roussy et al, 2013). Also found in the same study were strong results that musical preferences continue to develop throughout the course of ones' lifespan (Bonneville-Roussy et al, 2013).

Similar results were also found to be true in a study conducted by Greasley and Lamont (2006) at Keele University in Staffordshire, UK. Although unlike Bonneville-Roussy, Rentfrow, Xu and Potter's study, the findings related to participants going through phases of musical preference from one genre to another, as opposed to over ones' lifespan. The study was concerned with the emotional experience of individuals in relation to music preference and engagement with music. The 23 participants of this qualitative study ranged in age from 18 to 47 years. Results showed changes and fluctuations in music preferences over time. The majority of participants reported going through phases of preference for different music genres (Greasley & Lamont, 2006). A possible explanation for this result, as Greasley

and Lamont pointed out, is Russell's theory which states that an individual's preference for music increases with familiarity and decreases with repetition (Greasley & Lamont, 2006).

This is in-line with Pereira, Teixeira, Figueiredo, Xavier, Castro and Brattico, who's study entitled "Music and Emotions in the brain: Familiarity Matters" found that liking of music increased in the initial stages of familiarity with a piece of music but decreased once familiarity had reached its' peak (Pereira et al, 2011).

### **2.1.2 Musical Engagement**

Furthermore, the same study by Greasley and Lamont (2006) mentioned above showed a conscious awareness by participants of their engagement with music. With the speed at which technology has advanced in recent years, it has helped music to become more accessible to people and "revolutionised people's engagement with music" (Greasley & Lamont, 2006). This availability of music online and on people's mobile phones has significantly increased the speed to which people access music. As a result it has also increased people's engagement with pre-recorded music (Greasley & Lamont, 2006).

Perhaps the reason for differing preferences and engagement for differing music genres through ones lifespan is due to the pitch of different musical genres. An individual who dislikes music with low beats such as hip-hop may in fact dislike it due to the physiology of the ears transmitting the musical sounds differently to that of the next individual (Levitin, 2007,p.241). A sound which registers as pleasant to one may register as unpleasant to another due to this physiology (Levitin, 2007, p.241).

## 2.2 Effects of Music

### 2.2.1 Emotion

The effect to which music evokes emotion is a complex one. Meyer stated that emotion is “temporary and evanescent” (Meyer, 1956, as cited in Hu, 2009). It can be described as “a complex personal response to a subjective cognitive state, resulting in transitory changes in bodily responses, expressive behaviours’ and motivated actions.” (Forsythe, 2006) These definitions can be applied to the emotional effect of music. For example, depending on the type of music and the preference an individual has for a particular piece of music it can be said that the individual may respond to the musical experience with a shift in mood and/or emotion. It may also result in an individual experiencing a physical response or sudden desire to move their body, whether that is a foot tap, a repeated head nod or even a dance. These physical responses were noted by LeDoux as being of importance to the overall understanding of the emotional response system (LeDoux, 1998, p.40).

To imagine life without emotion is perhaps difficult. Whilst engaging in music neither pleasure nor displeasure would be felt, no delight when an exam is passed, no sadness in grief, no happiness in a joyous occasion. We could say reaction to situations would be numbed and humans would become devoid of emotions and emotional response to situations.

In saying that, music has been found to evoke emotions in individuals with several studies suggesting that “the most common goal of musical experience is to influence emotion” (Juslin & Vastfjall, 2008). The study of music and emotion seeks to understand the relationship between human affect and music. Previous research has found that individuals “value music primarily because of the emotion it evokes” (Juslin & Vastfjall, 2008). Similarly Slobodo points out that the primary dedication of music is indeed to evoke emotion (Slobodo, 1991 as cited by Khalifa et al, 2005).

### **2.2.2 Happiness**

Not only has music been found to have an emotional effect on individuals but also on their happiness. The human brain has the ability to sense both happiness and sadness in music due to the variation of mode and tempo (Khalifa et al, 2005). Rana and Akhtar conducted a study in 2011 on the relationship between interest in music on health and happiness. In line with a previous study by Khalifa, Schon, Anton and Liegeois-Chauvel's study, results of Rana and Akhtar's study found "that there were significant positive relationships between interest in listening to music and time spent listening to music and measures of both health and happiness" (Rana & Akhtar, 2011). Thus, a relationship was found to exist between music (and health) and happiness for participants of this study (Rana & Akhtar, 2011).

Similarly, a recent study in 2013 by Ferguson and Sheldon found that purposely listening to music to improve happiness can have positive results. The results showed that participants who listened to music which was considered to be positive sounding music had an effective influence on feelings of happiness, even more so when the deliberate intention was to boost feelings of happiness (Ferguson & Sheldon, 2013).

### **2.2.3 Happy Music**

Moreover, music typically with an upbeat tempo in a major key is often categorised as 'happy music' (Larsen & Stastny, 2011). An example of a genre with an upbeat tempo would be 'Popular' or 'Pop' music. Similar to how people's lives speed up and slow down, it has been found that individuals find pleasure in adjusting to the synchronisation of how musical tempo speeds up and slows down again (Levitin, 2006, p.191). Hunter, Schellenberg and Schimmack conducted a study in 2010 and found that participants associated 'Happy' music with a fast tempo in a major key (Hunter, Schellenberg & Schimmack, 2010). Although participants listened to both music categorised as happy and music categorised as sad in equal

measure, the ratings reporting by participants were generally higher for music categorised as happy than those reported for music categorised as sad (Hunter, Schellenberg & Schimmack, 2010).

In 2011 Larsen and Stastny's study measured the emotional response to music with conflicting cues by asking participants to press a button when they felt happy and another button when they felt sad whilst listening to music with conflicting cues of happiness and sadness (Larsen & Stastny, 2011). Results found that participants pressed both buttons simultaneously indicating that songs listened to by participants evoked both feelings of happiness and sadness at the same time (Larsen & Stastny, 2011). These results are in line with how the music had been categorised and participants demonstrated the ability to recognise this categorisation of the music listened to.

In 1999 researchers at McGill University in Montreal, Canada conducted a study on 10 volunteers which sought to examine emotional responses to pleasant and unpleasant music by means of examining cerebral blood flow (CBF) whilst participants listened to six versions of a piece of music (Blood, Zatorre, Bermudez, & Evans, 1999). Results found that music triggers "neural mechanisms similar to those previously associated with pleasant/unpleasant emotional states, but different from those underlying other components of music perception, and other emotions such as fear" (Blood, Zatorre, Bermudez, & Evans, 1999). Hence, it is possible that the results of this study explain the reasons for participants of Larsen and Stastny's study in 2011 (referred to previously) to identify the happy and sad music categorisation.

#### **2.2.4 Sad Music**

In contrast to music typically of an upbeat tempo in a major key being categorised as 'Happy', music typically of a slow tempo in a minor key is often categorised as 'sad music'

(Hunter, Schellenberg & Schimmack, 2010). A study by Kawakami, Furukawa and Okanoya's (2014) sought to understand why people listen to sad music. The study hypothesized that music evokes vicarious emotions in listeners. The participants of the study included 25 women and 19 men. Each participant was placed into one of two groups. One group included professional musicians and students of music, the other group included people working in a non-music related industry or who had not studied a music related subject(s) at university. Both groups were asked to perform four different tasks, all of which involved listening to the same set of music, once in a minor key and once in a major key. The participants documented their perceived or felt emotion having listened to the piece of music in both the minor and major keys. Interestingly, results showed that sad music is only perceived as sad but in actual fact listeners experience pleasant emotions simultaneous to hearing what they perceive to be sad music (Kawakami, Furukawa & Okanoya, 2014). Additionally, results showed the hypothesis to be true. Having measured both perceived and felt emotions whilst listening to music the participants did not experience sad emotions when listening to sad music, despite the music (played in a minor key) being perceived as sad. Instead it evoked positive and romantic emotions in the listener as documented by the researchers (Kawakami, Furukawa & Okanoya, 2014).

### **2.2.5 Music as a Therapy**

Whilst music is often used as a source of enjoyment and pleasure it has also been found to have far reaching beneficial effects than enhancing emotion at a joyous occasion. In recent years the popularity of music as a formal form of therapy has become more widespread in the field of patient therapy to enhance wellbeing (Wheeler, 2008). The Oxford English dictionary defines wellbeing as "The state of being comfortable, healthy or happy" (Oxford University Press, 2015). Utilising music to facilitate wellbeing is more commonly known as music therapy (Wheeler, 2008). Music therapy can be defined as "the use of sounds

and music within an evolving relationship between client/patient and therapist to support and develop physical, mental, social and spiritual wellbeing” (Bunt, 2002, p.3). It has also been found to aid the healing and recovery process of patients suffering from a wide range of neurological conditions including alzheimers and dementia (Sacks, 2007, p.xii).

### **2.2.6 Music Therapy and Wellbeing**

Furthermore, in 2014, Jamabo and George (2014) said of music therapy, if it is prescribed correctly, it can have positive effects on the wellbeing of those who are suffering from psychopathological disorders such as schizophrenia. Previous to Jamabo and George’s study, in 2007 Gold found music therapy to improve symptoms of schizophrenia in adult participants (who had been hospitalised with the condition at the time of the study). In addition to their standard hospital care, the participants of the study were encouraged to express themselves through the use of musical instruments on a weekly basis for up to 45 minutes at a time. The music therapy sessions were facilitated by trained music therapists and results found the hypothesis to be supported by improved symptoms of schizophrenia experienced by the participants of the study (Gold, 2007). This positive result supports the theory of music therapy having a positive effect on the wellbeing of patients suffering from schizophrenia.

Music therapy has also been found to have beneficial effects on patients of Parkinson’s disease (de Bruin et al, 2010). A cause of Parkinson’s disease is the degeneration of the cerebellum in the brain. The cerebellum is known to be the area of the brain responsible for motion. Interestingly, the cerebellum is known to be activated when a person listens to music (Levitin, 2006, p.174). A noticeable physical side-effect of the neurological disease is the difficulty patients encounter when walking (Levitin, 2006, p.174). As a result, it can lead to decreased levels of independence and increased risk of falling for patients (de

Bruin et al, 2010). A 13-week study in 2010 took place in Canada of 22 Parkinson Disease patients to study the effectiveness of listening to music whilst walking as a means of effective gait training (de Bruin et al, 2010). The group of 22 patients was divided into two groups, a music group of 11 and a control group of 11. The music group walked 3 times a week for at least 30 minutes duration whilst listening to a music playlist catering for their specific individual music preference (de Bruin et al, 2010). The music group results were found to demonstrate increased gait velocity, stride time and cadence in comparison to the control group. The music group therefore demonstrated positive benefits of music therapy for Parkinson disease patients (de Bruin et al, 2010). Perhaps these results can be accredited to the activation of the cerebellum when people are exposed to music (Levitin, 2006, p.174).

Furthermore, a qualitative research study conducted in 2012 by McClean, Bunt and Daykin on the healing and spiritual properties of music therapy at a cancer care center found to result in similar positive outcomes for the participants. The study took the form of a one off group music therapy session. Participants reported feelings of closeness and connectedness. One female participant was reported to say “I think [the] group had a very good spirit and harmony and I think that came through that session” (McClean, Bunt & Daykin, 2012). This statement by the participant displays good signs of cohesion within the group as a result of the music therapy session. However, it can be argued that the participants reported positive outcomes because they were interacting as a group in a social setting. In support of the benefits of music therapy to cancer patients, the researchers of the study reported an overall sense of connectedness between the group participants. Additional benefits such as making future plans to participate in music on an on-going basis were also reported in this research (McClean, Bunt & Daykin, 2012).

Furthermore, Jamabo and George's study in 2014, compliments the previous studies mentioned by drawing on thematic research for their study in Nigeria on the use of music as a treatment for depression in woman. The study found music therapy to be effective in the treatment of depression as it unites people through a common interest. "It also creates social cohesion, strengthening of bonds against outsiders" (Jamabo & George, 2014). Unlike conventional medicines however, music therapy was found to have little or no adverse side effects for the patient (Jamabo & George, 2014). Additionally, the study found the use of music in the treatment for people with disorders such as depression was found to have beneficial therapeutic effects for the patient. As a therapy it has been found to evoke positive emotions, even for those who have no knowledge of music (Jamabo & George, 2014).

Gold, Voracek and Wigram in their research of on the effects of music therapy for children and adolescents subscribes to this. The researchers found music therapy to have therapeutic qualities in the treatment of anxiety, aggression and agitation. They concluded it is for these reasons there has been a notable rise in the use of music therapy as an aid to healing (Gold, Voracek & Wigram, 2004).

### **2.3 Rational/Aims**

As illustrated in the literature reviewed, music can be evocative of emotions and can also have beneficial effects to an individuals' wellbeing. Most of the previous research performed did not account for the age of participants, nor was the research performed in Ireland. Thus, the purpose of this study is to examine the casual relationship between wellbeing, emotion and musical experiences on a group of male and female adults across two different age groups of an Irish sample. In light of previous research conducted it is deemed necessary to hypothesise the following on the Irish sample of this present study:

**Hypothesis 1** – Musical experiences will have an emotional effect on individuals between age groups surveyed.

**Hypothesis 2** – Preference for more music genres will have a positive correlation with levels of happiness experienced by individuals between age groups surveyed.

**Hypothesis 3** – Preference for more music genres will have a positive correlation with levels of emotion experienced by individuals between age groups surveyed.

### **2.4 Conclusion of Literature Review**

In conclusion, the purpose of this research is to examine whether music has the same or differing effects on the wellbeing and emotion of individuals across two different age groups of an Irish sample. It is for this reason that the research has been conducted.

## 3 Methodology

### 3.1 Participants

The total number of participants who partook in the research was 233. The sample included 154 female and 79 male adults from the age of 18 years upwards. The age of participants was categorised into 10 year ranges with the exception of those in the 18 – 24 age group and the 75 – upwards age group. Remaining age categories included 25 – 34, 35 – 44, 45 – 54 and 55 – 64. Age was further categorised into ‘Younger’ participants and ‘Older’ participants where younger participants included those from the age of 18 to 34 and older participants included those from the age of 35 upwards.

A method of convenience sampling was used with the majority of participants selected through means of the researcher’s social network. A minority of participants (approximately 30) were selected through means of accessing a third level institute in Dublin’s city centre. As a result of this sampling selection, the data collected reflected a diverse range of musical interest amongst participants as is documented in the results section of this research project. In return for partaking in the study, participants were offered access to a summary of the final results of this research.

### 3.2 Design

The overall design for this research is quantitative research adopting specifically a correlation design with a predictor variable such as ‘Happiness’ and criterion variable such as ‘Music Preference’. The predictor and criterion variables were correlated to establish the relationship between two variables. Where a correlation design was not deemed appropriate to test a hypothesis, descriptive statistics such as frequency of a result was the adopted approach chosen.

### **3.3 Materials & Measures**

As the research conducted was of a quantitative nature a questionnaire was used to collect the necessary data. The questionnaire consisted of a total of 73 questions divided into four sections which participants of the present research were asked completed. The four sections comprised of two pre-existing questionnaires and two original questionnaires created for the purpose of this study. Appendix 1. shows the complete questionnaire completed by participants.

The online survey tool ‘Survey Monkey’ was utilised for the purpose of gathering data. Survey Monkey allows a user to create a customised survey online and to share a link to that same survey with an audience of their choice. The 73 questions were input into Survey Monkey and a customised survey was created. At the header of the survey a note was added to brief participants of the purpose of the study. At the footer of the survey another note was added containing information on organisations which participants could contact if they were concerned with or affected by any of the issues raised within the questionnaire.

The link to the survey was then shared with the population via the researcher’s personal social network page. A total of 201 survey responses were collected via Survey Monkey. The survey remained ‘live’ on survey monkey for approximately one month to ensure a satisfactory response rate was gathered. The remainder of 32 survey responses were collected via third level institute in Dublin’s city centre.

#### **3.3.1 Questionnaire – Section 1**

Section 1 of the questionnaire consisted of The Oxford Happiness Questionnaire (OHQ). As explained by Robbins, Francis and Edwards (2010), this test was originally created by Hills and Argyle in 2002 as a predecessor to The Oxford Happiness Inventory (OHI) created in the late 1980s. As wellbeing has been defined as the state of being

comfortable, healthy or happy the inclusion of this questionnaire was deemed necessary as an appropriate means of measuring the level of wellbeing amongst participants (Oxford University Press, 2015). The OHQ uses a Likert scale to measure answers. This Likert scale ranges from number 1 to 6 where 1 equals 'Strongly Disagree' and 6 equals 'Strongly Agree'. Participants were asked to circle a number between 1 and 6 to indicate how much they agreed or disagreed with each statement in this part of the questionnaire.

The original OHQ consists of 29 questions', however, for the purposes of this study 27 of those 29 questions were used. The following two questions were omitted as they were deemed too sensitive in nature for the purpose of this study:

1. I don't have a particular sense of meaning and purpose in my life.
2. I don't have particularly happy memories of the past.

Appendix 1. contains the complete list of questions used in this study.

### **3.3.2 Questionnaire – Section 2**

Section 2 of the questionnaire consisted of the STOMP test. This test was originally created by Rentfrow and Gosling in 2003. STOMP refers to the "Short Test of Music Preference" (Rentfrow & Gosling, 2003). The original STOMP test measures an individual's preference for music across 14 genres. The genres included are "alternative, blues, classical, country, electronica/dance, folk, heavy metal, rap/hip-hop, jazz, pop, religious, rock, soul/funk, and sound tracks" (Rentfrow and Gosling, 2003). As the STOMP test has been used extensively in research since it's' creation, the inclusion of this test in the questionnaire was deemed necessary as a sound means of measuring musical preference amongst participants.

As the purpose of this study relates to an Irish sample an additional genre of ‘Irish’ music was added to this part of the questionnaire to make it more applicable to an Irish sample group. Additionally, to allow participants to reflect on other genres which may not be catered for in the original STOMP test a further option of ‘Other’ music was added.

Similar to the OHQ, the STOMP test also uses a Likert scale to measure answers. This Likert scale for the STOMP test ranges from number 1 to 7 where 1 equals ‘Strongly Dislike’ and 6 equals ‘Strongly Like’. Participants were asked to circle a number between 1 and 7 to indicate how much they liked or disliked the music genre listed in this part of the questionnaire. Appendix 1. contains the original STOMP test and appendix 2. contains the amended STOMP test.

### **3.3.3 Questionnaire – Section 3**

Section 3 of the questionnaire consisted of 9 questions relating to engagement and emotional response to music. It was created for the purposes of the present research by the researcher. The first 6 questions related to engagement with music while the remaining 3 questions related to the emotional response to music.

Similar to both the OHQ and the STOMP test, the ‘Engagement with music and Emotional Response to Music’ section also uses a Likert scale to measure answers. This Likert scale ranges from number 1 to 6 where 1 equals ‘Strongly Disagree’ and 6 equals ‘Strongly Agree’. Participants were asked to circle a number between 1 and 6 to indicate how much they agreed or disagreed with the statements in this part of the questionnaire.

Appendix 1. contains the complete engagement with music and emotional response to music questions.

### **3.3.4 Questionnaire – Section 4**

Section 4 of the questionnaire consisted of 7 questions created by the researcher for the purposes of the present research. The first 3 questions were demographic questions which related to the participants involvement with music, one of which included a subsequent question allowing the participant to enter free-text if they answered ‘Yes’ to that same question. The demographic questions were ‘Do you play a musical instrument?’, ‘Are you in a band?’, ‘Are you in a choir?’. The last 4 questions of this section related to the importance of music in the participants life, three of which included a subsequent question allowing the participant to enter free-text if they answered ‘Yes’ to that same question. Answers were measured using a measurement of numbers 1 and 2 where 1 equals ‘Yes’ and 2 equals ‘No’. Appendix 1. contains the complete list of 7 questions.

### **3.4 Procedure**

All data obtained was collected solely by the researcher. As there were two different methods of data collection, the distribution of the questionnaire and the collection of data differed. The first sample group (201 participants) were provided with a link to the questionnaire on Survey Monkey. Once the participants accessed the link but prior to them beginning the questionnaire, they were informed of the nature of the study. They were also informed that they could withdraw from the study at any given time should they wish to do so. They were asked to answer each section as honestly as possible. They were also informed that the questionnaire was completely anonymous and their name was not required at any point in the study. Upon completion of the questionnaire they were thanked and provided with the researchers contact details should they wish to contact the researcher regarding the study at any point. They were also provided with contact details of helpful organisations if in

the unlikely event they were affected by any issues raised as a result of participating in the study.

The second sample group (32 participants), were accessed through a third level institute in Dublin's city centre. Verbal permission was sought and granted from the researcher's supervisor to gain access to the sample group. Further written permission in the form of an email was granted from the lecturer whose class had been selected to participate in the study. A suitable date and time was arranged between the lecturer and the researcher to access the sample group.

On the agreed day and time, the researcher accessed the sample group and the lecturer briefly introduced the researcher to the class. The researcher then introduced herself to the class and gave a brief overview of the purpose of the study and the requirements of the sample group. Similar to the information provided to the sample group who participated in the online version of the survey, the class were asked to answer each section as honestly as possible. Upon completion of the questionnaire they were thanked and provided with the researchers contact details should they wish to contact the researcher regarding the study at any point. They were also provided with contact details of helpful organisations which they could contact if in the unlikely event they were affected by any issues raised as a result of participating in the study.

### **3.5 Ethical Considerations**

To ensure the present research adhered to ethical guidelines, a number of actions were taken. Prior to the completion of the study, participants were informed of the purpose of the research and what was required of them. They were also fully briefed on the reason(s) for asking them to participate. This ensured that participants had informed consent prior to

partaking in the study. Additionally, they were also informed that they had the choice to withdraw from the research at any given time should they wish to do so.

They were then informed that the questionnaire was completely anonymous and that their name was not required at any point in the study. At no point during or after the research was a participant asked to disclose any identifiable information such as their name or address. This ensured that confidentiality and anonymity of participants was maintained at all times.

### **3.6 Analysis**

After approximately one month, the online survey was closed by the researcher for access by participants, meaning no further data would be gathered online. Once both the online survey was closed and the data gathered from the third level institute, the researcher input the results into the Statistical Package for Social Sciences software tool called SPSS (Version.22) (Presidion, 2015). SPSS is used for recording and analysing social science research data and hence, the purpose of using SPSS was to allow the researcher to enter the quantitative data and order it in a manageable way to allow for quick and accurate analysis of the data.

Section 1 of the questionnaire, ‘The Oxford Happiness Inventory’ (Hills & Argyle, 2002), contained 10 questions which required re-coding. The researcher recoded these items by reversing the scores provided by participants into the same variable using SPSSv.22. The purpose of this exercise was to reverse the score of the Likert scale in line with the creators (Hills and Argyle) scoring technique. Total scores of each of the four sections of the questionnaire were then computed and data analysed using SPSSv.22.

## 4 Results

For the purpose of analysing the data, age categories of participants were re-categorised into younger and older participants. The age range for younger participants was categorised as 18 – 34 years and the age range for older participants was categorised as 35 years upwards. After descriptive frequencies of younger and older participants were generated in SPSS, the results showed that the total number of younger participants who took part in the research was found to be 116 and the total number of older participants who took part in the research was found to be 113. However a total number of 4 participants did not declare their age and so could not be categorised into either the younger or older age group.

Further descriptive statistics were generated in SPSS that were deemed relevant to the nature of this research. A total score was calculated for each section to firstly obtain a general sense of the results of the survey, secondly for ease of analysis of data and thirdly to detail the statistics in a presentable form. Once the descriptive statistics were generated, inferential statistics such as correlations were then generated. The purpose of generating inferential statistics was to establish the relationship between variables in order to test the hypotheses. The following section will present the descriptive and inferential statistics respectively.

## 4.1 Descriptive Statistics

**Table 1: Mean and Standard Deviations for younger and older participants for all related hypotheses variables**

Age		N	Minimum	Maximum	Mean	Std. Deviation
Younger Participants	Happiness	115	78	139	112.59	13
	Music (Genre) Preference	102	47	103	74.12	10.7
	Music Engagement	109	10	36	25.13	6.6
	Music Emotion	109	5	18	12.39	3.95
Older Participants	Happiness	112	65	148	113.16	14.97
	Music (Genre) Preference	93	32	100	76.02	10.95
	Music Engagement	101	13	36	24.77	5.21
	Music Emotion	101	6	18	12.27	3.46

As can be seen from table 1 above, little difference was found in the mean scores between younger & older participants for all of the variables analysed. However, younger participants scored slightly higher in Music Engagement with a mean score of 25.13 (SD = 6.60) and in Music Emotion with a mean score of 12.39 (SD = 3.95), whereas, older participants scored slightly higher in Happiness with a mean score of 113.16 (SD = 14.97) and in Music (Genre) Preference with a mean score of 76.02 (SD = 10.95).

### 4.1.1 Music Genre

When participants were asked how much on average they liked or disliked each music genre, the possible answers available to them ranged from 1-7 on a Likert scale, 1 being strongly dislike and 7 being strongly like. The total number of participants who took part in

the research was 233. However, the total number of participants who completed section 2 (the STOMP test) of the questionnaire which related to music genre preference was 215. Amongst younger participants preference for 'Pop' music scored strongest with a mean score of 5.90 (SD=1.18) but preference for 'Religious' music scored weakest with a mean score of 3.14 (SD=1.76).

Similarly, amongst older participants preference for 'Pop' music scored strongest with a mean score of 6.02 (SD=1.30). Preference for 'Religious' music also scored weakest amongst older participants with a mean score of 3.25 (SD=1.83). This indicates a similar music (genre) preference amongst younger and older participants surveyed. For a complete table of music (genre) preference scores see Appendix.3.

#### 4.1.2 Effect of Music on Emotion

**Table 2. Frequency and percent of the effect of music on emotion**

			I have felt emotional as a result of listening to music		I have felt emotional as a result of playing a musical instrument		I have felt emotional as a result of singing	
Age			Frequency	Valid Percent	Frequency	Valid Percent	Frequency	Valid Percent
Younger Participants	Valid	Strongly Disagree	1	.9	38	34.9	19	17.4
		Moderately Disagree			11	10.1	11	10.1
		Slightly Disagree	7	6.4	13	11.9	15	13.8
		Slightly Agree	9	8.3	19	17.4	13	11.9
		Moderately Agree	24	22.0	6	5.5	17	15.6
		Strongly Agree	68	62.4	22	20.2	34	31.2
		Total	109	100.0	109	100.0	109	100.0
		Missing System	7		7		7	
Total			116		116		116	
Older Participants	Valid	Strongly Disagree			43	42.6	14	13.9
		Moderately Disagree			12	11.9	6	5.9
		Slightly Disagree			21	20.8	13	12.9
		Slightly Agree	16	15.8	6	5.9	13	12.9
		Moderately Agree	26	25.7	7	6.9	17	16.8
		Strongly Agree	59	58.4	12	11.9	38	37.6
		Total	101	100.0	101	100.0	101	100.0
		Missing System	12		12		12	
Total			113		113		113	

To test the first and main hypothesis, if musical experiences have an emotional effect on individuals between age groups surveyed descriptive statistics were used to analyse the results of three key questions shown in table 2 above. Upon review of the results, there appears to be strong evidence that both age groups have felt emotional as a result of listening to music. 62.40% of younger participants and 58.40% of older participants reported that they strongly agreed with this statement, indicating that over half of participants from both age groups had experienced such an effect as a result of listening to music. A further 22% of younger participants and 25.70% of older participants moderately agreed with this statement.

Interestingly none of the older participants disagreed with the statement indicating a difference in the effect of music on the emotions of younger and older participants.

### 4.1.3 Musical Involvement and Importance

**Table 3: Frequency of musical involvement and importance of music to participants**

Answer of participant	Do you play a musical instrument?	Are you in a band?	Are you in a choir?	Is there a piece of music you enjoy so much that you always listen to?
Yes	31.8	4.1	13.4	47.2
No	68.2	95.9	86.6	52.8
Total	100.0	100.0	100.0	100.0

Answer of participant	Is there a piece of music you enjoy so much that you always play (on a musical instrument)?	Is there a song you find very special to you?	I could not live without music.
Yes	13.4	61.2	75.8
No	86.6	38.8	24.2
Total	100.0	100.0	100.0

Section 4 of the questionnaire which related to musical involvement and musical importance was completed by approximately 217 participants. This section comprised of a combination of 6 questions and 1 statement to which participants were asked to answer either Yes or No. The last question of this section was the statement “I could not live without music” to which participants scored strongest, with a positive result of 75.81% participants agreeing that they could not live without music. See table 3. above which shows the frequency of music involvement and importance of music to participants.

#### 4.1.4 Inferential Statistics

Inferential statistics were chosen as a method of analysis to test the two remaining hypotheses for two main reasons. The first reason was to show the linear relationship between the variables of the hypotheses and the second reason was to measure the strength of the relationship between the variables in the hypotheses chosen. Pearson's correlation coefficient is used to display the strength of the relationships between the variables.

To test the second hypothesis, if preference for more music genres will have a positive correlation on levels of happiness experienced by individuals between age groups, the calculated total of the 'Happiness' variable was correlated with the calculated total of the 'Music Preference' variable. The results of this test indicate for younger participants there was a small positive highly significant correlation between music preference & happiness because  $r=.287$  ( $N=115$ ),  $p<.01$  (Exact probability result is  $p=.003$ ). However, the results also indicate that there was no relationship between music preference & happiness for older participants because  $r=.152$  ( $N=112$ ),  $p>.05$ . (Exact probability result  $p=.147$ ). The level of probability is too high in the case, hence no significant relationship was found between the variables for older participants.

Therefore, for younger participants the alternative hypothesis (H1) was supported and the null hypothesis (H0) was rejected. However, the null hypothesis for older people is retained because no relationship was found between music preference and happiness for this age category. Taking both age categories into account, the alternative hypothesis was partially supported because the null hypothesis can be rejected for younger participants but must be retained for older participants.

To test the third hypothesis, if preference for more music genres will have a positive correlation with levels of emotion experienced by individuals between age groups surveyed, the calculated total of the 'Music Preference' variable was correlated with the calculated total

of the 'Emotional Response to Music' variable. The results of this test indicate for younger participants there was a moderately positive highly significant correlation between music preference and emotional response to music because  $r=.384$  ( $N=102$ ),  $p<.01$  (Exact probability result is  $p=.000$ ). However, for older participants the results indicate that there was a small positive non-significant relationship between music preference and emotional response to music because  $r=.191$  ( $N=93$ ),  $p>.05$ . (Exact probability result  $p=.072$ ).

Therefore, for younger participants the alternative hypothesis (H1) was supported and the null hypothesis (H0) was rejected. However, for older participants the null hypothesis was retained because the level of probability for older participants was found to be too high to reject the null hypothesis. Taking both age categories into account, the alternative hypothesis was partially supported because the null hypothesis was rejected for younger participants but was retained for older participants.

## 5 Discussion

### 5.1 Introduction

Music has been found to have beneficial effects on the wellbeing and emotion of individuals, with much research conducted in this area in recent years. In an age when pharmaceutical companies turn over billions of dollars in produce by assisting to improve the health and wellbeing of many patients through medicated drug use, alternative therapies such as music have also been found to have beneficial effects, with little or no adverse side effects on patient's health (Jamabo & George, 2014). Additionally, music has also been found to have an ability to evoke feelings of both happiness and sadness for individuals with links also to emotional reactivity to music for individuals (Goycoolea, Levy & Ramirez, 2013; Baltes & Miu, 2014).

In light of the beneficial effects which music has on individuals, the purpose of this present research is to critically analyse the extent to which music has on wellbeing and emotion across different age categories of an Irish male and female adult sample. As there has been minimal previous research performed to critically analyse the effects to which music has on younger and older participants of an Irish sample, it was therefore deemed necessary to explore this topic further by performing research in this area.

### 5.2 Music Genre

Results of the present study are in accordance with those of Hunter, Schellenberg and Schimmack's study conducted in 2010. This can be said as results of the music (genre) preference section of the STOMP questionnaire of this present research found 'Pop' music genre to be the highest scoring music genre for both age categories with a mean score of 5.90 (SD=1.18) for younger participants and a mean average result of 6.03 (SD=1.30) for older

participants. Hunter, Schellenberg and Schimmack's study in 2010 examined the preference participants had for music categorised as 'happy' and music categorised as 'sad'. The results reported in 2010 found participants scored generally higher for music categorised as happy than music categorised as sad. As mentioned previously, music typically with an upbeat tempo in a major key is often categorised as 'happy music' (Larsen & Stastny, 2011). An example of a genre with an upbeat tempo would be 'Popular' or 'Pop' music. Therefore, it can be said that the results of the STOMP test of the present research are in accordance with previous research findings.

Additionally, according to Bonneville-Roussy et al, music preference changes over a lifespan. However, in contrast to the results of the study conducted by Bonneville-Roussy et al, the results of the STOMP test questionnaire of this present research indicate similar music preferences between both younger and older participants. Although the STOMP test did not test music preference over a lifespan but at a point in time, this finding still contradicts the findings of Bonneville-Roussy et al in 2013 in that the findings for both older and younger participants are the same because both age categories liked 'Pop' music most and liked 'Religious' music the least. No differences therefore were found between the music preference of younger and older participants.

Furthermore, the results of the first and main hypothesis stated that musical experiences will have an emotional effect on individuals between age groups surveyed. The results of the descriptive statistics for this hypothesis found strong evidence that both age groups did indeed feel emotional as a result of a musical experience. In particular, there was strong agreement from both age groups for the statement "I have felt emotional as a result of listening to music". Scores showed 62.40% of younger participants and 58.40% of older participants strongly agreed with the statement. Additionally, 22% of younger participants and 25.7% of older participants moderately agreed with the statement and 8.30% of younger

participants and 15.80% of older participants slightly agreed with the statement. Therefore, over half of the younger participants surveyed agreed with the statement and all of the older participants agreed with the statement with an overwhelming 100% of the older participants agreeing to some level of degree that they had felt emotional as a result of listening to music. It is important to note that not one participant in the older category disagreed that they had felt emotional as a result of listening to music. These results support statements from Juslin and Vastfjall (2008) such as “the most common goal of musical experience is to influence emotion” and from Slobodo, who pointed out that the primary dedication of music, is indeed to evoke emotion (Slobodo, 1990 as cited by Khalfa et al, 2005).

The results also indicate a difference between age categories in that 100% of older participants agree to some level of degree that they had felt emotional as a result of listening to music. However, a total of 92.7% of younger participants agreed to some level of degree to the same statement, meaning a total of 7.3% disagreed to some level of degree with the statement. A possible reason for this is that the younger participants have not fully developed their emotional capacity to music.

### **5.3 Hypothesis**

However, in light of that, during the analysis of descriptive statistics of this present research, major differences were not found between older and younger participants. Generally the findings for levels of happiness, music preference, engagement with music and emotional response to music found similar results between the age categories of younger and older participants. Overall, indicating that age does not play a major role in the effect of music on wellbeing and emotion.

Having established this, the present study did however find partial correlations for two of the hypotheses tested via inferential statistics. Those being, the second hypothesis,

“Preference for more music genres will have a positive correlation with levels of happiness experienced by people between age groups surveyed” and the third hypothesis, “Preference for more music genres will have a positive correlation with levels of emotion experienced by people between age groups surveyed”.

Results of the second hypothesis tested found a small positive highly significant correlation, for younger participants between the variables tested. Younger participants who had a wide music preference were found to experience higher levels of happiness. However, this was not found to be the case for older participants due to a non-significant relationship finding between the variables tested. This indicates that the more music genres younger individuals prefer, the happier they appear to be. In finding a correlation between music preference and happiness for younger participants in the present research, these findings support those of Jamabo and George’s study in 2014 which found music to be effective in the treatment of depression. However, the same cannot be said for older participants of the present research. The results show that a wide music preference does not necessarily play a role in the levels of happiness experienced by older participants. However, a wide music preference does appear to play a role in the levels of happiness experience by younger participants.

Similarly, results of the third hypothesis tested found a moderately positive highly significant correlation for younger participants between the variables tested. Younger participants who had a wide music preference were found to have higher levels of emotional response to music. Whilst a small positive non-significant relationship was found for older participants, the significance was not high enough to justify rejecting the null hypothesis in this case. That is, a relationship was found for younger participants between variables of

having a wide music preference and the levels of emotional response to music but the same cannot be said for older participants.

This indicates that the more music genres younger participants prefer, the higher the level of emotional response to music they will experience. These results for younger participants support the findings to Baltes and Miu in their research conducted in 2014 where links were found between the mood and emotional reactivity to music. It would also seem sound to conclude that the results of this hypothesis are also in line with results found by Juslin and Vastfjall in 2008 whereby individuals were found to value music because of the emotion it evokes. The present research found similar results in that participants found to have a distinct liking for a wide range of music genres were also found to have a higher emotional response to music, indicating a strong possibility that their inherent preference for a wide range of music genres is linked to their emotional response to music.

#### **5.4 Implications**

A resounding theme resonates throughout the results of the present research which is perhaps the reason for limited difference found between age groups on the effect of music on wellbeing and emotion. Overall, there appears to be little difference in the effect of music on wellbeing and emotion between age groups studied. However, that is not to say the same results would not be found had children or adolescents taken part of the study also. It is possible that the effect of music on participants under the age of 18 years would yield differing results in terms of emotion and wellbeing experienced, in comparison to those over the age of 18 years.

#### **5.5 Limitations**

With regard to limitations of the present research, additional questions could have been added to section 4 of the questionnaire to allow participants indicate their past

experience of music. The descriptive questions in this part of the questionnaire were somewhat limiting in that there was no question relating to previous involvement in music. For example, a participant could have played a musical instrument or sang with a band or choir in the past. If this was the case for participants they were not provided with the opportunity to disclose this information. Therefore, the questions did not cater for a participants past involvement with music which may have affected the results of this research.

## **5.6 Further Research**

A qualitative approach is suggested to gain a more in-depth understanding of the effect to which music has on the wellbeing and emotion of participants between age groups. It is recommended that experimental research is performed to measure the response of both younger and older participants to music which could further establish if there are differences between age groups in their response to similar music genres. This difference could play a crucial role in determining if there really is a difference in the emotional response to music and the effect music has on wellbeing.

## **5.7 Conclusion**

In conclusion, this study has examined the effect of music on individuals' wellbeing and emotion across age groups. Few differences were found in the results between younger and older participants. However, future studies accounting for the limitations addressed in this research may yield significant results for the hypothesis tested. The results of this research suggest that more research is needed on the effects of music on wellbeing and emotion between younger and older participants. Additionally, it is recommended that the sample group is expanded to include a wider age range also.

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## 7 Appendix

### 7.1 Appendix 1

This study is concerned with how music has an effect on wellbeing and emotion. Please answer each section as honestly as you can. Do not spend too long thinking about each question as there is no right or wrong answers. Any information that you give will remain anonymous. You are not required to write your name anywhere on this survey. I hope you find this interesting and would like to thank you in advance for your time and co-operation.

1. What is your age? \_\_\_\_\_
2. What is your gender?      Male \_\_\_\_\_ Female \_\_\_\_\_

**Instructions - Please indicate how much you agree or disagree with each by circling a number after each statement, according to the following scale:**

- 1 = Strongly Disagree  
 2 = Moderately Disagree  
 3 = Slightly Disagree  
 4 = Slightly Agree  
 5 = Moderately Agree  
 6 = Strongly Agree

1.	I don't feel particularly pleased with the way I am	1	2	3	4	5	6
2.	I am intensely interested in other people	1	2	3	4	5	6
3.	I feel that life is very rewarding	1	2	3	4	5	6
4.	I have very warm feelings towards almost everyone	1	2	3	4	5	6
5.	I rarely wake up feeling rested	1	2	3	4	5	6
6.	I am not particularly optimistic about the future	1	2	3	4	5	6
7.	I find most things amusing	1	2	3	4	5	6
8.	I am always committed and involved	1	2	3	4	5	6
9.	Life is good	1	2	3	4	5	6
10.	I do not think that the world is a good place	1	2	3	4	5	6
11.	I laugh a lot	1	2	3	4	5	6
12.	I am well satisfied about everything in my life	1	2	3	4	5	6
13.	I don't think I look attractive	1	2	3	4	5	6
14.	There is a gap between what I would like to do and what I have done	1	2	3	4	5	6
15.	I am very happy	1	2	3	4	5	6
16.	I find beauty in some things	1	2	3	4	5	6
17.	I always have a cheerful effect on others	1	2	3	4	5	6
18.	I can fit in (find time for) everything I want to	1	2	3	4	5	6
19.	I feel that I am not especially in control of my life	1	2	3	4	5	6
20.	I feel able to take anything on	1	2	3	4	5	6
21.	I feel fully mentally alert	1	2	3	4	5	6
22.	I often experience joy and elation	1	2	3	4	5	6
23.	I don't find it easy to make decisions	1	2	3	4	5	6
24.	I feel I have a great deal of energy	1	2	3	4	5	6
25.	I usually have a good influence on events	1	2	3	4	5	6
26.	I don't have fun with other people	1	2	3	4	5	6
27.	I don't feel particularly healthy	1	2	3	4	5	6

**For the following items, please indicate your basic preference level for each of the music genres listed using the scale provided.**

- 1 = Strongly Dislike  
 2 = Moderately Dislike  
 3 = Slightly Dislike  
 4 = Neither Like nor Dislike  
 5 = Moderately Like  
 6 = Strongly Like  
 7 = Strongly Like

1.	Classical	1	2	3	4	5	6	7
2.	Blues	1	2	3	4	5	6	7
3.	Country	1	2	3	4	5	6	7
4.	Dance/Electronica	1	2	3	4	5	6	7
5.	Folk	1	2	3	4	5	6	7
6.	Rap/Hip-Hop	1	2	3	4	5	6	7
7.	Soul/Funk	1	2	3	4	5	6	7
8.	Religious	1	2	3	4	5	6	7
9.	Alternative	1	2	3	4	5	6	7
10.	Jazz	1	2	3	4	5	6	7
11.	Rock	1	2	3	4	5	6	7
12.	Pop	1	2	3	4	5	6	7
13.	Heavy Metal	1	2	3	4	5	6	7
14.	Soundtracks/Theme Songs	1	2	3	4	5	6	7
15.	Irish	1	2	3	4	5	6	7
16.	Other	1	2	3	4	5	6	7

**For the following items, please circle the most appropriate answer provided below:**

- 1 = Strongly Disagree  
 2 = Moderately Disagree  
 3 = Slightly Disagree  
 4 = Slightly Agree  
 5 = Moderately Agree  
 6 = Strongly Agree

1.	Music is important to me	1	2	3	4	5	6
2.	I consider myself to be musical	1	2	3	4	5	6
3.	I listen to music everyday	1	2	3	4	5	6
4.	I like to sing everyday	1	2	3	4	5	6
5.	I like to play a musical instrument everyday	1	2	3	4	5	6
6.	I like to dance often	1	2	3	4	5	6
7.	I have felt emotional as a result of hearing to music	1	2	3	4	5	6
8.	I have felt emotional as a result of playing a musical instrument	1	2	3	4	5	6
9.	I have felt emotional as a result of singing	1	2	3	4	5	6

**For the following items, please circle the most appropriate answer provided below:**

- |   |       |    |
|---|-------|----|
| 1. Do you play a musical instrument?  | Yes   | No |
| a. If so, which one?  | <hr/> |    |
| 2. Are you in a band?   | Yes   | No |
| 3. Are you in a choir?  | Yes   | No |
| 4. Is there a piece of music which you enjoy so much that you always listen to?               | Yes   | No |
| a. If so, which one?  | <hr/> |    |
| 5. Is there a piece of music which you enjoy so much that you always play (on an instrument)? | Yes   | No |
| a. If so, which one?  | <hr/> |    |
| 6. Is there a song you find very special to you?  | Yes   | No |
| a. If so, which one?  | <hr/> |    |
| 7. I could not live without music.  |       |    |

If you are concerned with or affected by any of the issues raised please do not hesitate to contact the following organisations:

The Aware Support Line – 1890 303 302

Counselling Services - <http://www.counsellingdirectory.ie/>

Thank you for your participation. If you require any further information concerning this research, please contact me, Frances Clandillon, at the email address provided below:

[1097204@mydbs.ie](mailto:1097204@mydbs.ie)

## 7.2 Appendix 2

**For the following items, please indicate your basic preference level for the genres listed using the scale provided.**

1—————2—————3—————4—————5—————6—————7

Strongly dislike    neither like    Strongly like

nor dislike

1. \_\_\_\_\_ Classical
2. \_\_\_\_\_ Blues
3. \_\_\_\_\_ Country
4. \_\_\_\_\_ Dance/Electronica
5. \_\_\_\_\_ Folk
6. \_\_\_\_\_ Rap/hip-hop
7. \_\_\_\_\_ Soul/funk
8. \_\_\_\_\_ Religious
9. \_\_\_\_\_ Alternative
10. \_\_\_\_\_ Jazz
11. \_\_\_\_\_ Rock
12. \_\_\_\_\_ Pop
13. \_\_\_\_\_ Heavy Metal
14. \_\_\_\_\_ Soundtracks/theme songs

### 7.3 Appendix 3

**Mean and Standard Deviations for STOMP (Short Test of Music Preference)**

Age		N	Mean	Std. Deviation
Younger Participants	Classical	112	4.9	1.45
	Blues	112	4.69	1.46
	Country	112	4.04	1.72
	Dance/Electronica	112	4.6	1.83
	Folk	112	4.4	1.67
	Rap/Hip-Hop	112	4.82	1.59
	Soul/Funk	112	5.17	1.35
	Religious	112	3.14	1.76
	Alternative	112	4.99	1.52
	Jazz	112	4.7	1.4
	Rock	112	5.7	1.31
	Pop	112	5.9	1.18
	Heavy Metal	112	3.32	1.9
	Soundtracks/Theme	111	5.41	1.36
	Irish	103	4.63	1.57
	Other	109	4.79	1.31
Older Participants	Classical	105	5.14	1.5
	Blues	104	4.74	1.53
	Country	105	4.32	1.64
	Dance/Electronica	105	4.65	1.78
	Folk	104	4.48	1.75
	Rap/Hip-Hop	105	4.4	1.69
	Soul/Funk	104	5.14	1.57
	Religious	105	3.25	1.83
	Alternative	104	4.75	1.49
	Jazz	105	4.45	1.74
	Rock	104	5.67	1.44
	Pop	105	6.02	1.3
	Heavy Metal	104	3.63	1.99
	Soundtracks/Theme	104	5.67	1.11
	Irish	96	5.36	1.43
	Other	102	4.74	1.35