THE INFLUENCE OF ALTERED STATES OF CONSCIOUSNESS, PERSONALITY TYPE, AND GENDER IN UK DANCE MUSIC AS CATHARSIS: A PILOT STUDY

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Thesis submitted for the degree of Bachelor of Arts (Hons) Psychology

April 2018

Acknowledgements

Firstly, I would like to thank my family who have always encouraged me to pursue my interests, and without the financial support of my parents the attainment of a degree would not be possible. My mother has sacrificed so much for me, and puts ensuring the happiness of myself and my sister above her own. I would like to express my gratitude and admiration for her in words, but words are simply not enough. I hope I can make her proud by completing this degree. I must also acknowledge the contribution of my final year project lecturer Michelle Kelly, and my supervisor Michele Kehoe. Both provided me with guidance for the formulation of this study, and displayed considerable patience in their assistance. I also gained a lot of confidence in my own ability during second year when Michele showed belief in my aptitude as a student through her feedback, so I must thank her for that. Finally, I would like to pay tribute to my fellow classmates and friends. I've gained some friends for life throughout the time spent in this course, who were always there for me during some difficult times.

Abstract

There is an overall paucity of research in the area of catharsis. The purpose of this pilot study was to explore the potential associations that altered states of consciousness (ASC) and openness to experience (OTE) personality traits have with catharsis in response to UK dance music (UK DM), whilst also assessing gender differences in catharsis scores. The sample consisted of 40 individuals (30 males, 10 females), with a primary music preference of UK DM. To conduct this research, a 10-minute UK DM stimulus, Catharsis Scale, 5-Dimensional Altered States of Consciousness Rating Scale, and Big Five Personality Inventory were utilized. The results indicated the presence of a significant association between ASC and catharsis, however a negative correlation was found which was contrary to the theoretical basis of past research. There was no association between OTE personality type and catharsis, and no significant differences were found in catharsis scores between males and females. The major theoretical implication from this preliminary research is the rejection of the suggestion that ASC acts as a link between music and catharsis outcomes. Therefore, some contradictory findings to existing research are offered in this study, and suggestions for future research in this area to incorporate are outlined in the discussion.

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Chapter One: Literature Review

Introduction

Research in the area of catharsis is rather outdated and somewhat convoluted. Definitive evidence has yet to be provided regarding it's place in psychology as a valid therapeutic method for emotional expression and regulation. Therefore, here within lies the problematic nature of the position of catharsis within modern psychology; the overall dearth of existing research and it's inadequacies make the further appraisal and evaluation of this theory a necessity. However, the cathartic method in conjunction with music has displayed some success and promise in past research (Arnett, 1991). In addition, music based therapy is a burgeoning field within psychology, and it's application has gained further merit over time (Cassity, 2007; Franco, De Luca, Cahill, & Cabell, 2018). Attaining further insight into the reasons and motivating factors behind music preference in terms of catharsis will add to the current literature on the use of music as an emotional regulator, whilst also outlining a genre which has yet to be incorporated within research in the area (UK dance music). By producing preliminary research, this pilot study can provide a basis for future research to seek to replicate and also develop further.

Historically, the concept of emotional catharsis stems back as far as 2000 years ago, but was made popular in more recent times by Sigmund Freud who considered the emotional discharge of affect as an effective method of relief (Breuer & Freud, 1895/1968). Catharsis as a term has been used extensively, but it's various different definitions are wide ranging and it has still yet to be defined in a clear and universal way, thus resulting in a distorted and relatively ambiguous presentation of this concept within the existing literature (Scheff, 1978). The Jungian perspective is a useful aid for proper understanding of the healing nature, properties, and values of music as therapeutic medium. The collective values in art such as music have the ability to manifest aspects of the personal unconscious and thereby restore

balance in an individual's consciousness which may have encountered issues stemming from neuroses or other factors (Marshman, 2003).

Catharsis Overview

Catharsis is commonly defined as: "the process of releasing, and thereby providing relief from, strong or repressed emotions". The view of emotions within catharsis theory is of entities which can "build up" and therefore must be discharged or expressed in order to maintain stable psychological function (Bohart, 1980). Straton (1990) found that there is a surprising lack of serious research into catharsis from a psychotherapeutic perspective, despite what little is out there largely supporting it. Within the existing literature, some contradictory findings and disparate perspectives regarding the catharsis theory has led to it's efficacy being questioned by researchers in terms of it's application as a therapeutic tool (Kosmicki & Glickauf-Hughes, 1997). In addition, the overrepresentation of anger and aggression in past research for the purposes of exploring the therapeutic value of catharsis is problematic, as findings have been mixed in their support of this "venting" hypothesis (Bushman, Baumeister & Phillips, 2001). For instance, research on the venting of anger and aggression by Bushman (2001) produced findings which contradicted the catharsis theory, whereas others have unequivocally supported it (Bushman, Baumeister, & Phillips, 2001; Schafer, 1970; Straton, 1990; Arnett, 1991). This debate on it's efficacy can be clearly seen within a heart rate reduction study which found that the component of emotional tension reduction in catharsis theory was supported, whilst the component of drive reduction was not supported (Verona & Sullivan, 2008). Therefore, research which incorporates cathartic release and it's facilitators from different emotional states is necessary for a more rounded view of this psychological phenomena and it's therapeutic potential. Scheff (2015) has gone

as far as to label the lack of advances within research in the area of catharsis as a “scandal” and that it is in significant need of a new approach.

From a clinical standpoint, an extreme emphasis is placed upon the context that harbours catharsis. Pierce and colleagues (1984) proposed a context for cathartic release which reframed emotional expression as acting wilfully as opposed to a reactionary process, thus highlighting the empowering nature of this framework. Additionally, Glickauf-Hughes and Wells (1995,1997) argued that the aspect of catharsis which was therapeutic was not just the expulsion of suppressed affect alone, but rather the combination of this with the retrieval and integration of experiences which ultimately leads to self acceptance. A meta-survey concluded that this notion makes it possible to surmise that catharsis displays effectiveness for the production of both attitudinal and behavioural change, as the insights and experiences gained from emotional expression through cognitive facilitation in catharsis have a greater significance than the release of suppressed emotions (Bemak & Young, 1998). However this research was focused upon a psychotherapeutic group setting, thus reflecting a specific criteria for these findings as opposed to the more individual based scenarios of focus within other studies.

Music as a Cathartic Medium

In terms of potential vehicles through which to experience cathartic release, Arnett (1991) conducted research that highlighted the potential of using music as a means for achieving catharsis. The participants of this study indicated that their preferred music (heavy metal) had cathartic effect, and assisted them in dealing with suppressed emotions of anger and aggression. This provides evidence for the effectiveness of music in the cathartic method, and also raises interesting questions about the role of music preference in relation to catharsis. Research has suggested that exposure to a preferred music genre has emotional

benefits, i.e. if an individual is feeling anxious, listening to their music of preference will result in a reduction of their levels of anxiety (Walworth, 2003). Musical engagement has also been linked to psychological well-being as a strategy of emotional regulation (Rickard, 2012), and is a commonly utilized regulation strategy amongst young people (Thayer, Newman, & McClain, 1994). Furthermore, Rider (1997) presented findings which highlighted that cathartic release in conjunction with music has shown significant effectiveness in the restoration of homeostasis.

From a Jungian psychological perspective, the fundamental function of the implementation of music as a therapeutic tool is for the purposes of expressing ineffable or unconscious emotions (McClary, 2007). The Orphic archetype gives an illustration of music serving as a medium by which the expression of self and also healing occurs (McClary, 2007). Additionally, music can act as a vehicle which propels the individual towards emotional wholeness and individuation (Wärja, 1994). The Jungian perspective also mirrors music therapy in that it's goal and function is to address an individual's issues by bringing unconscious issues into consciousness, such as inexpressible emotions (Shafron, 2010). This mirrors the goals of catharsis, and therefore provides further substance to the potential therapeutic benefits of the cathartic approach in tandem with music. Furthermore the findings of Arnett (1991) are confirmatory of music acting as a cathartic medium for the release of negative emotion regardless of whether it is unconscious or present in consciousness, which is a therapeutic context that is in line with, and shared by, the Jungian perspective of music (Shafron, 2010; McClary, 2007).

Altered States of Consciousness

A theoretical perspective that possibly explains the link between music and the experience of catharsis is altered states of consciousness (ASC). A sub-category of ASC

referred to as shamanic states of consciousness has been conceptualized as an "integrative state" of hyper focus whereby the "rational self" is transcended and assists in the identification of sources discord or conflict/disharmony within the individual in a manner which shares similarities to the free association and dream analysis techniques inherent in Jungian psychoanalytic traditions (Knox, 2009). Dissociation is a psychological mechanism by which a number of altered states of consciousness are formed, and also serves a plethora of functions such as the cathartic release of specific emotions or feelings (Ludwig, 1983). Neuroscientific research has indicated the presence of a functional dissociation in music whereby pleasurable responses to music result in dopamine release in the striatal system which is central to the maintenance of behaviour, as the caudate has a greater involvement in anticipation and the nucleus accumbens has a greater involvement in experiencing peak emotional responses (Salimpoor, Benovoy, Larcher, Dagher, & Zatorre, 2010). The association between music and altered states of consciousness is a long standing one, and research has also shown the ability of music to induce altered states of consciousness (Fachner, 2011). As an example, trance music has been shown to produce and elicit dissociative trance-like states amongst it's listeners (Becker-Blease, 2004). A characteristic which is common in altered states of consciousness is a change or increase in emotional expression (Khatami, 1978). Some of the features of altered states of consciousness that are psychologically therapeutic are emotional release, self-awareness and relief from anxiety or stress (Woods, 2009). Blood and Zatorre (2001) found that listening to your favourite or preferred music demonstrates the direct involvement of brain structures associated with conveying emotion within musical information, thus suggesting the capability of music to function as "a catalyst of strong emotions that may lead to trancing" (Penman & Becker, 2009, p. 64).

In the context of music, trancing refers to a multidimensional process of altered consciousness induced by intense rhythmic pattern and stimulation (Neher 1961,1962) and it is possible to surmise that it can be viewed as part of the ASC driven theoretical vehicle by which individuals reach catharsis. The components of trance are: (1) a spectrum of frequency that is characterized by distinct drums of low and loud bass (Neher, 1962, pp. 152-153); (2) the repetition of rhythmic patterns through "monotonous drumming" so as the occurrence of this spectrum of frequency is ensured; and (3) the sequences of drum beats have a specific tempo (beats per minute) so as brain patterns are entrained (Fachner, 2011). The implementation of musical trance for the induction of ASC as a method within music therapy has been shown to have therapeutic value and benefit (Rüegg, 2007). This idea of trance has also been used to explain the occurrence of ASC in rave cultures such as techno music that comprises a number of components in it's rhythmic patterns such as sound (bass frequencies), repetition (loops and sequences), and tempo (Cousto, 1995; Hutson, 2000; Weir, 1996).

Fundamentally, the component of absorption in ASC refers to an effortless and spontaneous attentional engagement, as opposed to logical and analytical periods of focus (Herbert, 2013; Jamieson, 2005). Additionally, absorption has been associated with openness to experience (OTE) personality traits. This state of focused attention is wide ranging in terms of everyday experience and extends to "flow" states as well as peak experiences (Csikszentmihalyi, 1996) which have been linked to creative practices such as music and focused attentional engagements like trance (Flor-Henry, Shapiro, & Sombrun, 2017). Laski (1961, 1980) conducted research which identified the existence of two specific experience types which seem to overlap with the concept of absorption. The one of most prevalence to this research topic is that of "intensity experiences", which are described as strongly emotional and related to art (music in particular). The consensus from existing research

suggests that it is best to comprehend dissociation and absorption as being encompassed within trance (Herbert, 2009, 2011a,b,d).

Personality Type

In light of past research, an interesting external factor to explore within the interplay between music and catharsis is the role of personality traits regarding this phenomena. This is because of the widespread presence of studies focusing on aggression, which is an emotion generally attributed to neurotic personality types (Sanz, Garcia-Vera, & Magan, 2010). The Big Five personality trait model developed by Costa & McCrae (1985, 1989, 1992, 1995) consists of five basic factors: extraversion, agreeableness, conscientiousness, neuroticism and openness to experience. Research has shown that individuals with high openness to experience (OTE) personality traits are prone to using music as an emotional regulator during periods of strain, thereby supporting it's therapeutic application (Vella & Mills, 2017). Ivcevic and Brackett (2015) also found a significant interaction effect and association between OTE and emotion regulation ability. Additionally, these individuals are drawn towards music which has significant aesthetic and intellectual "depth" in genres that inhabit outside of the dominant mainstream canon (Dunn, de Ruyter, & Bouwhuis, 2011; Rentfrow, & Gosling, 2003; Dys, Schellenberg, & McLean, 2017). As an example, preference for heavy metal music has been shown to be significantly associated with OTE traits (Swami et al., 2013).

A study on the perception of the actual attribute dimensions of music which dictate preference indicated that OTE is associated with positive valence and depth (Greenberg et al., 2016). Furthermore, high OTE individuals have been shown to exhibit plasticity in terms of their incorporation of information which is novel, such as unfamiliar music as indicated by emotional response (Ladinig & Schellenberg, 2012). People who score highly on OTE traits

have been found to often experience emotions which are both broad ranging and complex (Terraciano, McCrae, Hagemann, & Costa, 2003). The largely unexplored area of individual differences in experiencing mixed emotions (contradictory feelings such as concurrent happiness and sadness) has also shed light on OTE traits being a predictor of this complex emotional state (Barford & Smillie, 2016). This has significance in terms of catharsis, as the cathartic method may act as a regulator for this permeability of consciousness experienced by high OTE individuals (Collier, 1956; McCrae & Costa, 1997). However some disparate findings are in existence regarding OTE and music, as one study found that high OTE and intellectual individuals use music in a more rational way, and therefore this poses the need for clarification on the validity of research stating music is used for emotion regulation amongst OTE individuals (Chamorro- Premuzic, & Furnham, 2007).

Gender Differences in Emotional Expression/Regulation

According to the catharsis theory, rumination is thought to be more effective than distraction for the diffusion of negative emotions (Bushman, 2002). Research has outlined female's tendency to utilize rumination as a preferred method of dealing with negative emotions, as opposed to males who primarily look to incorporate distraction based techniques (Thayer, Newman, & McClain, 1994). Males have also been shown to have an inherent motivation for the maintenance of control by expressing emotions that are reflective of power such as anger (Timmer, Fischer, & Manstead, 1998). In a study based on perfectionism and experiencing catharsis, the findings indicated the presence of significant differences in catharsis scores between males and females, with females scoring higher than that of males (Cerkez & Birol, 2014).

Meta-analyses have also highlighted gender differences in terms of emotional expression, with females exhibiting greater levels of emotional expression than males overall

(Brody & Hall, 1993; Kring & Gordon, 1998). Furthermore, females have been shown to have a greater likelihood than males of reporting the use of a diverse range of strategies for the regulation of emotions (Nolen-Hoeksema, & Aldao, 2011). However research by Gross, Richards, and John (2006) conversely found no significant gender differences in frequency or levels of emotion regulation between males and females. Green (2007) has suggested the existence of gender differences in the perception of music, which in turn makes it possible to surmise that this would have implications for catharsis outcomes in response to music. Her perspective centers upon the argument that the gender of the listener will "influence their overall response to music, and perception of masculinity or femininity, so that "… men and women must have a slightly different type of musical experience resulting from their gender" (p. 139).

UK Dance Music

UK dance music (UK DM) is a blanket term for a number of sub genres which include chronologically: Jungle, Drum & Bass, Garage, Grime and Dubstep. As this music is fundamentally non-mainstream and has formed it's own subculture, it is a logical choice for assessing catharsis in relation to OTE personality traits. Furthermore it's extensive use of bass "drops" is significant because of research which has shown that this is linked to intense emotional experiences (Solberg, 2014). Additionally, Kamenetsky and colleagues (1997) have shown that sound dynamics are associated with increased and amplified emotional expressiveness, which is of prevalence to this music preference because of the presence of high frequency sound systems in UK DM culture that could possibly accelerate the cathartic process. The demographic for this bass heavy music is predominantly young males, who have been identified in a study on the influence of gender in music preference as having a preference for exaggerated bass in music (McCown, Keiser, Mulhearn, & Williamson, 1997).

Research has also shown that preference for listening to a specific genre of music is related and differs according to purpose, context and mood (Upadhyay, Shukla, Tripathi, & Agrawal, 2017).

The independent variation of tempo and mode can lead to music with conflicting cues (fast and minor or slow and major) and therefore the elicitation of mixed emotions (Hunter, Schellenberg, & Schimmack, 2008, 2010; Ladinig & Schellenberg, 2012; Larsen & Stastny, 2011). This was confirmed by the findings of Larsen and Stastny (2011) where exposure to music with conflicting cues resulted in simultaneous happiness and sadness responses. It is possible to achieve this variation of tempo and mode through the incorporation of UK DM as each subgenre has different tempo's: Jungle (150-160 beats per minute [bpm]), Drum & Bass (170 bpm), Garage (130 bpm), Grime (130-140 bpm), and Dubstep (140 bpm), and different modes are also present in each. Additionally, the results of a study by Redfield (2017) indicated that electronic dance music can facilitate the induction of ASC and transpersonal phenomena experiences that have positive implications for psychological well-being in daily life. These contributing physiological processes are also joined by symbolic processes, which provide potential for spiritual healing and emotional expression through this music induced framework (Hutson, 2000).

Rationale

Firstly, there is an overall paucity of research in the area of catharsis. The furthering of knowledge regarding this phenomena can help solidify the place of catharsis as a therapeutic tool within psychotherapy, and also outline the potential of music as a cathartic aid for the restoration of homeostasis in those who experience complex mixed emotional states where contrasting feelings which are incompatible emerge into consciousness.

Although the relationship between personality traits and music preference is well established and researched, few studies have focused on singular genres as opposed to cross-genre, and this study can help add to this gap in the literature by examining UK DM in depth. High OTE individual's tendency to use music as an emotional regulator provides the basis for examining this personality type in relation to catharsis, and also their innate preference for non-mainstream music makes UK DM a justified choice for this research.

Additionally, exploring the role of altered states of consciousness in the relationship between UK DM and catharsis provides the potential for the discovery of a mediating factor within this association. The absence of more current and contemporary research within the domain of catharsis also warrants a need for further investigation of this psychological phenomena. The incorporation of more recent research in the areas of personality type and ASC allows for an investigation into some new and emerging factors which possibly contribute to experiencing catharsis from a contemporary perspective. As well as this, the utilization of a music genre which has not yet been studied in relation to catharsis, personality type, or ASC gives further credence to the potential merit of this research. It is also important to consider gender differences in terms of catharsis, because of the contrasting findings which have been presented in terms of emotional regulation within much of the existing literature. In addition, by assessing gender differences it is possible to attain a true understanding of the effectiveness of UK DM as a facilitator for catharsis because of the existing research which has outlined predominantly male's preference for this style of music, but also in contrast female's greater tendency to score higher on levels of catharsis as outlined previously.

Furthermore, existing studies which examine preference for heavy metal music in terms of catharsis and also personality type give a reference point for comparison and further research. Additionally, many controlled quantitative experimental designs fail to consider some of the complex nuances involved in catharsis, resulting in a lack of clarity in much of

the existing research. As opposed to simple discharge, the incorporation of mixed emotions also allows this study to examine the potential of catharsis in helping individuals to achieve clarity in their emotions.

Research Questions & Hypotheses

Based on the findings and theoretical basis of the existing literature, the following research questions and hypotheses are proposed:

R1: Is there a significant relationship between ASC and catharsis in response to UK DM?

R2: Is there a significant relationship between OTE personality traits and catharsis in response to UK DM?

R3: Do females score higher on catharsis than males in response to this UK DM?

H1: ASC is associated with catharsis in response to UK DM

H2: OTE personality traits are associated with catharsis in response to UK DM

H3: Females have higher catharsis scores than males in response to UK DM

Chapter Two: Method

Participants

The sample for this research consisted of 40 individuals (30 male and 10 female) within an age range of 18 to 47 (average age: 29.08). A convenience sampling technique was utilized. Although a relatively small sample, it was deemed appropriate given the obscure nature of the research material and the potential demographic/population to be drawn from. Additionally, the predominantly male gender split is justified as a result of it's representativeness which is based upon previous research indicating largely male's preference for this bass heavy style of music, and future research can look to incorporate a more even gender split for comparison. In order to be included in the study the participants had to be at least 18 years of age. The sample was drawn largely from the Dublin area, and all participants also had to have a primary music preference for UK DM in order to be included in the study. Facebook groups centered upon shared interests in UK DM such as "Long Live Beautifully Crafted Jungle!" and "Drum & Bass Events Ireland" were utilized to both promote the study and gain participants. Additionally, flyers were handed out at local UK DM events in Dublin where individuals were given a description of the study along with an email address for contact if they had interest in participating.

Materials/Apparatus

This study utilized a number of questionnaires to assess participants in the areas of catharsis, altered states of consciousness, and finally personality type. In addition, a music stimulus designed by the researcher was implemented which incorporated each of the five subgenres contained in UK DM (Jungle, Drum & Bass, Garage, Grime, and Dubstep). The music stimulus consisted of a 10 minute DJ mix of tracks from each of these five subgenres,

and had both variation in tempo and mode throughout in order to enhance the probability of eliciting mixed emotions in the participants.

As a result of the lack of available generalized catharsis scales, the researcher utilized a modified version of the scale developed by Vaughn (2015), which was used to assess catharsis in relation to aggression. This measure consists of a 10-item questionnaire where individuals rate their response on a scale ranging from 1 (strongly agree) to 7 (strongly disagree). The reliability of the original scale was found to be very high (Cronbach's alpha of .95, $M = 3.84$, $SD = 1.57$). The reliability of the scale implemented for this study was also found to be high (Cronbach's Alpha of .8).

The 5-Dimensional Altered States of Consciousness Rating Scale (5D-ASC) is a standardized measure used to assess ASC (Dittrich, Lamparter, & Maurer, 2010). For the purposes of this research, the researcher utilized a modified version of this scale which consisted of a 12-item questionnaire containing statements which were deemed to be of particular pertinence to this current research area. Each statement on this scale was presented for rating on a five point scale ranging from "no, not more than usually" to "yes, much more than usually", and participants were asked to rate these statements in terms of how much they applied to the preceding stimulus/experience. The reliability of the scale was found to be very high (Cronbach's Alpha of .93).

For the purposes of ascertaining the individual personality type of each of the participants, the Big Five Inventory (BFI) was utilized (John & Sristaslava, 1999). Contained in the BFI is five sub components, which consist of: extraversion, agreeableness, conscientiousness, neuroticism and openness to experience. The BFI is a 44-item questionnaire where individuals rate their response to each item on a scale of 1 (strongly disagree) to 5 (strongly agree). This measures individuals on both the Big Five personality dimensions and their corresponding facets. A certain number of items contained within the

inventory are reverse scored (see appendix). The reliability of this inventory ranges from .79 to .88. The reliability of the BFI for this study was .78.

Design

To conduct this research, a within-participants cross-sectional quantitative research design was used. The dependent variable (DV) was catharsis and the research design was also composed of three independent variables (IV) which were: gender, ASC, and OTE personality type respectively for the t-test and correlation analyses. All participants were assigned to the same condition but were split into groups of male (n=30) and female (n=10) during statistical analysis in order to compare and control for gender in relation to catharsis scores for the third hypothesis. For the linear regression analysis, the dependent variable (DV) was catharsis and the predictor variable (PV) was ASC.

Procedure

The research utilized a Google Forms document for participants to take part in the study which contained all of the implemented questionnaires and scales as well as the music stimulus, and information regarding their rights and consent for participation in the study. Prior to commencing participation, the information regarding the study was presented which included what the research entailed in terms of it's purpose, risks/benefits, participants rights, confidentiality, contact information, and indication of informed consent (see appendix). Firstly, after giving consent to participate and confirming that they were of over 18 years of age, the participants provided some demographic information which was composed of age and gender, as well as indicating their primary music preference to be that of UK DM. Following this, participants were asked to listen to the 10 minute UK DM stimulus in it's entirety. Upon completion of this task, the participants then filled out the Catharsis Scale

where they were asked to rate their response to the preceding music stimulus on a 10-item questionnaire using a 7-point likert-type scale. Subsequent to this, the participants then filled out the 5-Dimensional Altered States of Consciousness Rating Scale (5D-ASC), which again was in response to the preceding music stimulus and also was comprised of 12 items rated on a 5-point scale. Finally, the participants then completed the Big Five Inventory which was composed of 44 items rated on a 5-point scale so as to assess their predominant personality traits and type. Following this the participants then submitted their completed data for collection by the researcher, which was transferred to a Word Excel document and then imported into SPSS in order to formulate the data set for statistical analysis.

Chapter 3: Results

Descriptive Statistics

The descriptive statistics for all variables in this study apart from gender are presented in the table below (Table 1), and include the mean (both confidence intervals and standard error), median, standard deviation and range. In terms of gender, the frequency was 10 females (valid percentage = 25%) and 30 males (valid percentage = 75%). The average age of participants was 29.08 years, SD = 7.76. Age was found to be non-normally distributed, with skewness of .719 (SE = .37) and kurtosis of -.54 (SE = .73) The Q-Q plots and tests of normality indicated that the rest of the collected data was normally distributed with the presence of some outliers, apart from TotalOTE scores which was found to be non-normally distributed (TotalCS: sig. = .2, TotalASC: sig. = .117, TotalBFI: sig. = .2, TotalOTE: sig. = .003). Additionally, the 95% confidence intervals were high, whilst the standard error was low, thus indicating that there is a high probability for the results being replicated, as well as the sample size being somewhat representative of the target population.

Table 1:

	Mean (95% Confidence Intervals)	Std. Error Mean	Median	SD	Range
TotalCS	28.33 (25.72-30.93)	1.29	28	8.14	13-52
TotalASC	31.35 (27.68-35.02)	1.81	32	11.47	12-50
TotalBFI	150.28 (145.49-155.06)	2.36	152	14.95	107-174
TotalOTE	38.05 (36.23-39.87)	.9	39	5.7	12-45

Inferential Statistics

H1:

The relationship between altered states of consciousness (ASC) and catharsis (CS) was investigated using a Pearson product-moment correlation coefficient. In order to ensure no violation of the assumptions of normality, linearity and homoscedasticity, preliminary analyses were undertaken. A moderate, negative correlation between the two variables was found ($r = -.42$, $n = 40$, $p < .05$). This indicates that the two variables share approximately -84% of variance in common. Therefore, the results indicate that higher levels of ASC are associated with lower levels of catharsis. More specifically, that ASC is an influential factor for catharsis outcomes. A linear regression analysis was also utilized to test if ASC significantly predicted participant's catharsis scores, $B = -.42$, $t(38) = 10.78$ $p < .001$. A regression of statistical significance was found: $F(1, 38) = 7.96$, $p < .05$ with an R^2 of .17.

H2:

A pearson product-moment correlation coefficient was utilized in order to investigate the relationship between total BFI scores and total OTE scores. Preliminary analyses were also performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There was a strong, positive correlation between the two variables ($r = .67$, $n = 40$, $p < .05$), thus indicating a shared common variance of approximately 44.89%.

Additionally, the relationship between openness to experience scores and catharsis scores was also investigated using a Pearson product-moment correlation coefficient. Again, preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There was a non-significant weak, positive correlation between the two variables ($r = .1$, $n = 40$, $p > .05$). This indicates that the two variables share

approximately 1% of variance in common. Therefore the results denote that higher levels of OTE are not associated with higher levels of catharsis.

H3:

Subsequent to the correlation analyses, an independent samples t-test was undertaken in order to determine differences and compare catharsis scores between males and females. There was no significant difference found in scores between the two groups, $t(38) = 1.09$, $p = .28$, two-tailed with males ($M = 29.13$, $SD = 8.33$) scoring higher than females ($M = 25.9$, $SD = 7.4$). The magnitude of the differences in the means (mean difference = 3.23, 95% CI: -2.77 to 9.23) was small (Cohen's $d = .41$).

Chapter 4: Discussion

Purpose

The underdevelopment of catharsis as a concept within psychology has led to a lack of general consensus regarding it's place and validity as a therapeutic tool. However, research on music acting as a facilitator for catharsis has shown positive prospects in terms of therapeutic benefit (Arnett, 1991), and exploring some of the mechanisms involved in this association has implications for the concretization of the catharsis concept in tandem with music. Guided by a theoretical basis from the existing literature, the primary aim of this research was to explore the potential associations that ASC, personality type and gender have with catharsis outcomes in response to UK DM. By evaluating possible factors which are influential in the link between UK DM and catharsis, it is possible to gain insight into some of the components involved in the association between music and the onset of cathartic experiences. Therefore this pilot study has implications for future research in this area, and can help to form a basis for later research to develop further. Although gender and OTE personality type were found to have a non-significant relationship, ASC was found to have a significant association and thus supported what was hypothesized in this respect whilst also providing positive implications for this study. The hypotheses and findings will be assessed in detail below in order to provide insight into their meaning within a broader context, along with both their theoretical and practical implications as well as suggestions for future research to implement.

Hypothesis One:

The results indicated the presence of an association between ASC and catharsis, and thereby supported H1. Therefore, this makes it possible to state the existence of a relationship between ASC and catharsis, but in the opposite way of what was expected as a negative

association was found. This is an interesting finding which has implications for future research to incorporate, as many studies have stated the possibility of music-induced ASC having cathartic effect (Ludwig, 1983), but little quantitative evidence has been provided to back up this assumption/theory. This finding also makes it possible to surmise that the shamanic states of consciousness sub-category of ASC can be identified as an important factor in UK DM and catharsis outcomes, as it centres upon the integration and identification of sources of affect within the individual which are music induced and then further propelled to emotional catharsis from affect (Knox, 2009). This suggests that ASC can possibly act as an emotional regulator in itself and may indicate the reasons for subsequent decreases in catharsis scores. Furthermore, the regression analysis also indicated that ASC significantly predicted catharsis, which provides further validity to this association.

The explanation for this negative association may lie in the stimulation and rhythmic pattern for the entraining of brain patterns (trancing) provided by UK DM which is central to the induction of ASC (Neher, 1961; Fachner, 2011), and therefore suggests that trancing could be the most influential component of music-induced ASC for emotionally cathartic experiences. Trancing relies on monotonous drum patterns, which were absent from the UK DM stimulus utilized in this study because of the shifts in tempo and mode designed in order to facilitate mixed emotions (Hunter, Schellenberg, & Schimmack, 2008, 2010; Ladinig & Schellenberg, 2012; Larsen & Stastny, 2011). Therefore this could have negatively impacted the relationship between ASC and catharsis. However, further clarification is needed on this assumption and is something that should look to be developed further in the future. In addition, it also suggests that electronic music such as UK DM can facilitate the induction of ASC as outlined in previous research (Redfield, 2017), but has a reverse influence to what was expected in terms of acting as a link between UK DM and catharsis, which is contrary to the theoretical basis outlined previously. Therefore we can drawn a reasonable conclusion

that the results are confirmative of the theoretical perspective of ASC acting as a barrier between music (UK DM specifically) and cathartic outcomes. This is a significant finding which adds to the literature in both the areas of catharsis and also ASC. Future research should look to examine this association further by examining the interplay between ASC and catharsis through the utilization of other music genres which have also been found to be cathartic amongst individuals with a preference for them, so as to see if results are replicated and thereby concretize this relationship.

Hypothesis Two:

As OTE personality traits were found to have a non-significant association with catharsis scores, it possible to surmise that the cathartic method is not a suitable approach for the alleviation and regulation of the mixed emotional states inherent in high OTE individuals (Barford & Smillie, 2016). Furthermore, as H2 was not supported this raises questions on the assumption that high OTE individuals are prone to using music as an emotional regulator (Vella & Mills, 2017). In addition, it also gives further weight and credence to the findings of Chamorro-Premuzic and Furnham (2007) whose research conversely indicated that high OTE individuals use music in a more rational sense, as opposed to an emotionally driven way. Despite the fact that OTE personality traits were found to not be associated with catharsis and therefore disproved what was hypothesized, a strong association was found between total OTE scores and total BFI scores. Thus, this suggests the majority of individuals in the sample scored highly on OTE traits which is consistent with past research indicating that high OTE individuals are drawn to music genres such as UK DM which reside outside of the dominant mainstream canon of music and have significant artistic depth (Dunn, de Ruyter, & Bouwhuis, 2011; Rentfrow, & Gosling, 2003; Dys, Schellenberg, & McLean, 2017). Furthermore, as some past research has indicated that catharsis is effective for the alleviation

of anger and aggression which are emotions attributed to neurotic personality types (Sanz, Garcia-Vera, & Magan, 2010), an interesting factor for studies to explore in the future would be to test if catharsis is associated with neuroticism.

Hypothesis Three:

H3 was not supported as females did not score higher on catharsis than males. Although no significant differences were discovered when doing gender comparisons on catharsis scores, the findings were still indicative of males scoring slightly higher than females. This was not expected, and goes against past research which has found that females score more highly on catharsis than males (Cerkez & Birol, 2014). However the reasons and explanations behind this finding are two-fold, as past research on gender differences in music preference has also suggested that predominantly males have a preference for exaggerated bass in music such as UK DM (McCown, Keiser, Mulhearn, & Williamson, 1997). Therefore this can be viewed as a possible explanation for the differences in catharsis scores that were discovered between males and females, and is something which future research should look to investigate further. It also ties in with the perspective of past research which centred upon gender being a significantly influential factor in the perception and experience of music (Green, 2007). Therefore further clarification is needed on the influence of gender on cathartic experiences in conjunction with UK DM, as it is conceivable that the gender discrepancies in the sample of this current study could have caused this outcome in the results. There are a number of ways to address this issue, but the primary concern of future studies should be to incorporate a more even gender split. This finding also raised questions on rumination being a more effective method than distraction within catharsis theory (Bushman, 2002), as females are more prone to using rumination (Thayer, Newman, &

McClain, 1994) but were found to score slightly lower on the catharsis scale than that of males.

Implications

A delphi poll study by Cassity (2007) indicated a positive future for music therapy but that the use of music therapy which is catharsis-oriented was expected to stay the same and not increase by 2016. However, the advent of a steady rise in healthcare costs globally means that more cost-effective and alternative approaches such as music therapy for improving or maintaining well-being are becoming increasingly salient (Franco, De Luca, Cahill, & Cabell, 2018). This pilot study therefore has applications which extend to real world scenarios and further research can build upon it's findings so as to solidify the place of catharsis as a therapeutic medium in tandem with music. This current study highlights the importance of music preference in the facilitation of catharsis, whilst also indicating the significance of ASC in this interplay and therefore denotes the importance of utilizing music which does not induce ASC in the listener in order to achieve catharsis and thereby therapeutic benefit. As a result, the major theoretical implication from this preliminary research is the rejection of the suggestion that ASC acts as a link between music and catharsis outcomes. Increasing emphasis and focus upon prevention and early intervention techniques within contemporary psychology also makes catharsis in tandem with music a pertinent concept because of it's usefulness in dealing with everyday sources of potential negative affect. By reducing affective symptoms through cathartic release, this eases the burden on the need for psychiatric interventions among individuals who have difficulty in regulating emotions. As this study has outlined the significance of ASC in the interplay between music and cathartic experiences, this has both theoretical and practical implications which can impact future research and ultimately be potentially utilized in psychotherapeutic settings.

Limitations

A primary limitation of this pilot study is the uneven gender split, as well as the lack of a control group for comparisons in catharsis scores. The small sample size was also an issue, as a larger sample was hoped to be drawn when embarking upon this current research but the obscure nature of the population made this difficult to achieve and therefore impacted the power that was desired for statistical analysis. As stated previously, the uneven gender split was justified because of primarily male's preference for UK DM, but this still may have impacted the collected data (specifically in terms of gender comparisons during statistical analysis) and therefore must be considered. A positive to take from the sample is that although it is small in size, it is relatively representative of the target population as outlined earlier. Despite the noted limitations, this pilot study still provides important groundwork for future research to build upon. The incorporation of a control group and intervention-based method whereby one group is exposed to UK DM and another group is exposed to either no music, or music of a different genre to UK DM, can further outline the potential of UK DM as a medium for catharsis. Although this limitation of the current study is somewhat obvious, the time constraints and lack of resources available for drawing a more significant number of participants from this obscure and hard to reach population made this a necessary sacrifice in order to develop this preliminary research. Additionally, addressing these issues with a more even gender split and also a significantly larger sample size would provide a more robust experimental design that could resolve the inadequacies in the methodology of this study.

Future Research

One of the major strong points from this experimental design was the high reliability of the catharsis scale that was utilized for this research (Cronbach's Alpha = .8). Therefore the methodology implemented for this research provides both a framework for future

research to replicate, as well as a highly reliable catharsis scale to further examine the interplay between UK DM and catharsis, thereby resolving issues in this area with regards to the lack of available catharsis measures. Future research should also look to implement qualitative research in order to establish the underlying reasons for UK DM's marginally greater cathartic effect for males than females. Additionally, incorporating a more even gender split should be a primary concern for future research so as to explore whether the results would be replicated in a more robust methodological design with regards to the sample. Furthermore, the music stimulus designed by the researcher is a useful tool for further research to make use of because of it's variation of tempo and mode which is for the purpose of helping to elicit the mixed emotions inherent in high OTE individuals. Although the results of this study showed the cathartic method to be an inadequate approach for the alleviation of this complex emotional state, future research implementing a different theoretical framework can assess new ways to address this issue whilst still being able to utilize the music stimulus designed for this current research. Although the small sample size, uneven gender split, and absence of a control group in this pilot study are noticeable limitations, the methodology and design of this study still produced interesting findings with highly reliable measures that studies in the future can make use of.

Conclusion

This pilot study provided important clarifications on some of the influential factors involved in catharsis following exposure to UK DM. The statistically significant association discovered between ASC and catharsis has important implications for future research, as the quantitative evidence provided by this pilot study means that further analysis can seek to identify and flush out what factors within ASC (e.g. trancing, dissociation, absorption, etc.) are most influential in this relationship with catharsis. These are important considerations for

the temporal progression of development in the concept of catharsis as a therapeutic tool, and also have implications which extend to the music therapy sector of research. As catharsis has received little attention from researchers in contemporary psychology, this piece of preliminary research has provided a modern insight into this concept from a different perspective to that of the outdated existing research. The provision of significant findings and clarifications of existing research, along with pertinent and highly reliable measures has laid both important groundwork and a basis for future research in this area to follow. This pilot study has therefore illuminated an underdeveloped topic in tandem with a music genre that has yet to be studied in quantitative psychological research, and sought to expose some of it's underlying contributing factors so as to add to this current paucity of literature.

Appendix A:

Catharsis Scale

Please rate each of the following items, in terms of how characteristic they are of you.

1. After listening to this music I felt less stressed.

Strongly Agree Strongly Disagree

1------2------3------4-------5------6------7

2. Listening to this music allowed me to assume a sense of control.

Strongly Agree Strongly Disagree

1------2------3------4-------5------6------7

3. After listening to this music I felt relaxed.

Strongly Agree Strongly Disagree

1------2------3------4-------5------6------7

4. Listening to this music allowed me to release some of my suppressed emotions.

Strongly Agree Strongly Disagree

1------2------3------4-------5------6------7

5. Listening to this music allows me to vent my emotions in a therapeutic manner.

Strongly Agree Strongly Disagree

1------2------3------4-------5------6------7

6. Venting my emotions through listening to this music allows me to alleviate much of my pent up feelings, and therefore improves my mood.

Strongly Agree Strongly Disagree

1------2------3------4-------5------6------7

7. When I am stressed, I am less likely to be stressed after listening to this music.

Strongly Agree Strongly Disagree

1------2------3------4-------5------6------7

8. Listening to this music allows me to express and focus my mixed emotional tendencies in a constructive way that does not affect others.

Strongly Agree Strongly Disagree

1------2------3------4-------5------6------7

9. I got a sense of enjoyment after engaging in artistic and intellectual behaviors from listening to this music.

Strongly Agree Strongly Disagree

1------2------3------4-------5------6------7

10. When listening to this music allows me to have a sense of control, my stress is alleviated.

Strongly Agree Strongly Disagree

1------2------3------4-------5------6------7

Appendix B:

5-Dimensional Altered States of Consciousness Rating Scale (5D-ASC)

Please rate to what extent the statements apply to your particular experience – compared to normal waking consciousness.

1. I felt that I was on the verge of unconsciousness.

No, not more than usually 1------2------3------4-------5 **Yes**, much more than usually

2. Sounds seemed to influence what I saw.

No, not more than usually 1------2------3------4-------5 **Yes**, much more than usually

3. Worries and anxieties of everyday life felt unimportant.

No, not more than usually 1------2------3------4-------5 **Yes**, much more than usually

4. My sense of time and space was altered as if I was dreaming.

No, not more than usually 1------2------3------4-------5 **Yes**, much more than usually

5. Conflicts and contradictions seemed to dissolve.

No, not more than usually 1------2------3------4-------5 **Yes**, much more than usually

6. Objects in my surroundings engaged me emotionally much more than usual.

No, not more than usually 1------2------3------4-------5 **Yes**, much more than usually

7. I felt isolated from everything and everyone.

No, not more than usually 1------2------3------4-------5 **Yes**, much more than usually

8. I could see images from my memory or imagination with extreme clarity.

No, not more than usually 1------2------3------4-------5 **Yes**, much more than usually

9. I felt totally free and released from all obligations

No, not more than usually 1------2------3------4-------5 **Yes**, much more than usually

10. I experienced a kind of awe.

No, not more than usually 1------2------3------4-------5 **Yes**, much more than usually

11. My imagination was extremely vivid.

No, not more than usually 1------2------3------4-------5 **Yes**, much more than usually

12. I experienced profound inner peace.

No, not more than usually 1------2------3------4-------5 **Yes**, much more than usually

Appendix C:

The Big Five Inventory (BFI)

Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who likes to spend time with others? Please write a number next to each statement to indicate the extent to which you agree or disagree with that statement.

Disagree Strongly	Disagree a little	Neither agree nor disagree	Agree a little	Agree strongly
1	2	3	4	5

I see Myself as Someone Who…

____1. Is talkative

____2. Tends to find fault with others

____3. Does a thorough job

____4. Is depressed, blue

____5. Is original, comes up with new ideas

____6. Is reserved

____7. Is helpful and unselfish with others

____8. Can be somewhat careless

____9. Is relaxed, handles stress well

____10. Is curious about many different things

____11. Is full of energy

____12. Starts quarrels with others

____13. Is a reliable worker

____14. Can be tense

____15. Is ingenious, a deep thinker

____16. Generates a lot of enthusiasm

____17. Has a forgiving nature

____18. Tends to be disorganized

____19. Worries a lot

____20. Has an active imagination

____21. Tends to be quiet

____22. Is generally trusting

____23. Tends to be lazy

____24. Is emotionally stable, not easily upset

____25. Is inventive

____26. Has an assertive personality

____27. Can be cold and aloof

____28. Perseveres until the task is finished

____29. Can be moody

____30. Values artistic, aesthetic experiences

____31. Is sometimes shy, inhibited

____32. Is considerate and kind to almost everyone

____33. Does things efficiently

____34. Remains calm in tense situations

____35. Prefers work that is routine

____36. Is outgoing, sociable

____37. Is sometimes rude to others

____38. Makes plans and follows through with them

____39. Gets nervous easily

____40. Likes to reflect, play with ideas

____41. Has few artistic interests

____42. Likes to cooperate with others

____43. Is easily distracted

____44. Is sophisticated in art, music, or literature

Scoring:

BFI scale scoring (″“R″ ” denotes reverse-scored items):

Extraversion: 1, 6R, 11, 16, 21R, 26, 31R, 36

Agreeableness: 2R, 7, 12R, 17, 22, 27R, 32, 37R, 42

Conscientiousness: 3, 8R, 13, 18R, 23R, 28, 33, 38, 43R

Neuroticism: 4, 9R, 14, 19, 24R, 29, 34R, 39

Openness: 5, 10, 15, 20, 25, 30, 35R, 40, 41R, 44

Appendix D:

Information Sheet & Consent Form

Information Sheet

You are invited to take part in a research study on the influence of altered states of consciousness, personality type, and gender in UK dance music as catharsis. The primary aim of the research is to explore the potential association that the factors of altered states of consciousness and personality type have with catharsis in response to UK DM, whilst also assessing gender differences in catharsis scores. I, Niall Delaney, will be conducting this research under supervision from a lecturer within the National College of Ireland, and the project has received approval from the Psychology Research Ethics Committee.

In this study you will be asked to provide some personal information regarding gender and age, as well as indicating your primary music preference to be that of UK dance music. You will then be exposed to a music stimulus and asked to rate your response on both the Catharsis Scale (a 10-item questionnaire) and the 5D-ASC (a 12-item questionnaire). Finally you will be asked to complete the Big Five Personality Inventory (a 44-item questionnaire). The study typically takes 20 minutes (10 minutes for the music stimulus, 5 minutes for the 5D-ASC and Catharsis Scale, and 5 minutes to complete the Big Five Personality Inventory) across a single session.

You may decide to stop being a part of the research study at any time without explanation. It is also your right to request that any data supplied to that point be withdrawn. In the event you have any questions or queries about the procedure upon reading this information sheet, you should ask the researcher before commencing participation in the study, and it is your right to have these questions answered.

The potential risks involved in this research consist of triggering emotional distress as a result of the exploration and evaluation of strong or repressed emotions. The potential

benefits consist of experiencing catharsis and thereby experiencing therapeutic effect from strong or repressed emotions.

No personal information will be contained in the collected data. All data collected from this study will be anonymised and treated confidentially. The data from all participants will be compiled, analysed, and submitted in a report to the Psychology Department in the School of Business. The data from participants will not be identified by name at any stage of this research. The intentions for use of this data do not go beyond research for an undergraduate thesis and therefore individual participants will remain de-identified and anonymous after completion of the study.

My supervisor Michele Kehoe will be glad to answer your questions about this study at any time. You may contact her at michele.kehoe@ncirl.ie, 4498519. If you are interested in finding out about the results of this study following completion, you should contact me at x15750361@student.ncirl.ie

Consent Form

By ticking the box below in this Google Forms document, you are indicating and agreeing that: (1) you have read and understood the Participant Information Sheet, (2) you are satisfied that any questions about your participation in this study have been answered, (3) you are aware of the potential risks (4) you are taking part in this research study voluntarily, and (5) your data will be anonymised and confidential.

Agree √

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