

# Evaluation of the use of 'Good Vibrations' percussion courses to improve motivation to change and treatment readiness with convicted sexual offenders embarking on treatment programmes

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## Abstract

Previous research has highlighted the benefits of implementing music-centred interventions in correctional settings. The present study used a mixed method approach to explore prisoners' experiences of a week-long Indonesian percussion music course, introduced in a UK sex offender prison to enhance motivation and readiness for change pre-treatment. Study one examined psychometrics changes for experimental and control groups (both intellectually disabled and on intellectually disabled) pre the Good Vibrations (GV) course, post GV and pre-treatment and post treatment. The results indicated some significant changes in attitudes and motivation and self-efficacy for non-intellectually disabled participants. The data were inconclusive for intellectually disabled participants.

Study two incorporated qualitative interviews designed to focus particularly on the benefits in relation to prisoners' participation in subsequent treatment groups. Participants (n=5) reported improved interpersonal skills, self-confidence, abilities to express and regulate emotions, as well as feelings of relaxation and freedom. These factors showed to have positively influenced prisoners' experiences in their respective treatment group.

The research team recommend that the results of study two are used to design a larger scale quantitative research programme to assess the putative benefits of participating in the Good Vibrations percussion course.

Keywords: music therapy, readiness to change, prison, sex offenders, treatment, good vibrations

## Dedication

This report is dedicated to Jessica Wallace who tragically lost her life in 2015; Jess had kindly been collecting data for this project and freely volunteering her time to help. Thank you, Jess.

## Introduction

Music is viewed by many as a form of therapy, and there is empirical evidence to suggest various reasons for humans' affinity to, and resonance with, music. Scientists have theorised that music is a precursor to spoken language and is the link between the complex communications of humans in modern times and the more abstract vocal sounds of our ancestors; this intertwining of language and early guttural utterances through music is postulated as the reason for why we innately respond to melodies and rhythms, even at a very early age (McMullen & Saffran, 2004; Mithen, 2005; Jentschke, Koelsch, & Friederici, 2005; Zentner & Kagan, 1996). Other explanations relate to the complexity of the human brain and its ability and need to detect patterns, which may be why the configurative nature of music appeals to people (Clynes, 2013). Despite divergent explanations propounded as to why music is important to humans (McDermott & Hauser, 2005), evidence from historical records indicate that music is one of the oldest socio-cognitive domains of the human species (Jentschke, Koelsch, & Friederici, 2005) and one of the steadiest elements in human evolution (Sachs, 2008). From early times in human civilisation, people have gathered together to engage in activities involving music – singing, playing instruments or simply listening (Sachs, 2008; Wall & Duffy, 2009). These music-related behaviours are presumed to have influenced evolutionary processes such as group coordination, group cohesion and social communication in all human cultures (Zentner, Grandjean, & Scherer, 2008; Zatorre & Peretz, 2003). Present in every culture and playing an important role in everyday lives, music is not only considered universal (Cohen, 2004; Letts, 1997) but also one of the most popular recreational activities in the modern world (Zentner, Grandjean, & Scherer, 2008), stirring emotions in a uniquely deep manner (Juslin, Barradas & Eerola, 2015).

In recent years, research has examined more closely what it is that produces such benefits for people when engaging with music, besides its value as entertainment. It has been asserted that there is a therapeutic and rehabilitative potential of music in medical treatments (Aldridge, 1993; Thaut, 2005; Richardson, Babiak-Vazquez, Frenkel, 2008), psychiatric settings (Gold, Solli, Krueger, & Lie, 2009; Saroyan, 1990) and psychological services (Erkillä et al., 2011; Chang, Chen, & Huang, 2008). This has led to an increase in the use of various types of musical interventions as a form of rehabilitation for patients and indeed with forensic populations (Bensimon, Einat, & Gilboa, 2015; Chen, Hannibal, Xu, & Gold, 2014; Tuastad & O'Grady, 2013).

### Why is music considered therapeutic?

There is a general consensus that music can act as a communication tool – which - by helping people to overcome linguistic, cognitive, physical or mental barriers (Wigram & Elefant, 2009), allows

individuals to engage with each other (Cross, 2014). When groups perform music, spoken language is not necessarily required (Wigram & Elefant, 2009). Instead, it requires non-verbal social interactions such as joint attention, eye contact and turn-taking (Gold, et al., 2010), and therefore becomes a valuable medium for practicing these every-day communicative behaviours (Cross, 2014). Making music together requires coordination and switching between leading and following others. Evidence suggests that this leads to an enhanced sense of mutual affiliation and helps to create and maintain social bonds (McNeill, 1995) and a sense of collaboration (Cross, 2014).

Furthermore, one of the core assumptions in the theoretical literature on the functions and psychological effects of music is that it can facilitate and influence the expression of emotions (Haakvoort, Bogaerts, Thaut, & Spreen, 2013). For example, music can promote the formation of sensory images, which in turn can help in recognising and expressing emotions (Haakvoort et al., 2013; Juslin & Västfjäll, 2009). Music can also bring comfort, relieve stress, energise or distract (Saarikallio & Erkkilä, 2007). One explanation for this is the physical influence music has when it changes the functions in the brain that are responsible for heart rate, blood pressure and the release of hormones. Human heart rates respond and adjust to the frequency, tempo and volume of music and thus can help to slow our heart rate and blood pressure in turn (Burns et al., 2002; Labbe, Schmidt, Babib, & Pharr, 2007). Music has also been shown to reduce cortisol levels after stress is induced (Khalfa, Dalla Bella, Roy, Peretz & Lupie, 2003).

### Music in correctional services

Prison can be a stressful and unfavourable environment: often strict, psychologically demanding and sometimes violent (e.g. Hulley, Liebling, & Crewe, 2011; Morgan, 1981). Prisons can be perceived as depersonalising and dehumanising and prisoners may be faced with challenges such as the social stigma that is associated with being incarcerated (Schnittker & John, 2007), feelings of hopelessness and powerlessness and deeply internalised shame and guilt (Marshall, Marshall, Serran, & O'Brien, 2009; Tangney, 2011). Although all prisoners share the common identity of being "criminal", a common problem is the feeling of lacking an identity, which, for many, results in feelings of uncertainty and hopelessness regarding their own self and future (SAMHSA, 2005). Additionally, the majority of prisoners are from highly disadvantaged backgrounds, including poor parenting, family criminality (Dallaire, 2007; Farrington, 2000; Farrington et al., 2006), poverty, and a lack of education and employment (Walsh, 2006). Moreover (and perhaps partly because of these reasons), compared to the general population, prisoners are more likely to suffer from anxiety, depression, stress, and anger problems (Mills & Kroner, 2005), and have deficits in social skills, such as problem solving, communication, self-expression and verbal skills (Matlack, McGreevy, & Rouse, 1994).

As a result of these challenges (some of which are exacerbated or caused by the environment), rehabilitative interventions, including music therapy, have been implemented with the aim of increasing skills and supporting individuals. Music therapy has been defined as the clinical and evidence-based use of music interventions aiming to accomplish individualised goals within a therapeutic relationship (American Music Therapy Association, 2015). Music therapy can be formal or informal, delivered to groups or individuals and take on various forms, such as composing, improvising, performing and playing or listening, each focusing on and targeting different therapeutic goals (Wall & Duffy, 2009). Additionally, certain behaviours that are likely to be evoked by anger, such as shouting or punching, are generally seen as unacceptable in prisons and can result in warnings and adjudications. Through music therapy (also known as musical interventions), these behaviours can be transformed into more constructive and acceptable behaviours. Anger, for example, can be heard in the dynamics and the tempo of the play (Haakvoort, 2002). Moreover, certain musical activities, such as improvisation, allow prisoners to express themselves freely rather than follow strict rules, which can generate a sense of autonomy and responsibility and therefore allow for personal growth and development of potentials (Chen et al., 2014; Mössler, 2011). Furthermore, some emotional and interpersonal problems experienced by prisoners are linked directly to the isolated environment of the prison. Most musical interventions incorporated in prisons are delivered in group settings, and research suggests that group environments can help members to interact and connect to each other, which reflects societal procedures of 'the outside world' (Yalom & Leszcz, 2005).

A particular group of offenders for which music therapy may have multiple benefits are sexual offenders. Although less likely to have experienced the disadvantaged upbringing of the general prison population, they may have particularly poor interpersonal skills (Hanson & Harris, 2000). This is likely to result in emotional loneliness – a risk factor for recidivism among sexual offenders (Doren, 1999). Sexual offenders have been highlighted as being less capable of identifying and expressing their emotions and may struggle when required to identify these verbally (Hanson & Harris, 2000). Music is complex, contains different elements and is rich in contrasts, and research has shown that it can trigger a wide range of feelings in people (Davies & Richards, 2002). For individuals who struggle to express themselves and their problems verbally, music may serve as a medium to express feelings and emotions in a non-verbal way (Fulford, 2002; Loth, 1994).

Despite research suggesting the above benefits, the application of musical interventions in prisons is still uncommon (Gold et al., 2014). Most of the psychological treatments or offending behaviour programmes that are offered in UK prisons are based on cognitive behavioural approaches requiring verbal participation (Stevens, 2013). Although research has shown that these programmes reduce



re-offending rates, the idea of going into a group setting and disclosing personal details of one's life and offending behaviour, to strangers, can be challenging to prisoners (Rhodes, 2010; Stevens, 2013).

## Good Vibrations

Good Vibrations is an art-based music intervention that runs in prisons (amongst other settings). During the course of a week the participants (around 15-20 individuals) learn how to play Gamelan instruments, and are also taught about Gamelan and Indonesian culture (Wilson, Caulfield & Atherton, 2009). At the end of the week the participants perform a musical piece as a group, and are given a CD of their music (Wilson, Caulfield & Atherton, 2008). The project has taken place in several prisons in the UK, and previous research has evaluated its effectiveness. Improvements have been seen in participants' social skills, motivation to join education, relationships, self-esteem and confidence and in their cultural awareness. Good Vibrations have asserted that these improvements can therefore improve desistance from crime (Henley, 2015). Improvements in social skills was one of the main improvements following participation in Good Vibrations (Henley, 2015; Wilson et al., 2008) and this was seen by prison staff as well as the prisoners themselves (Digard, Von Sponeck & Liebling, 2007). Within this, skills such as listening and working in groups were seen to improve most (Eastburn, 2003), and this remained the same six months after completing the course (Wilson et al., 2008). Improvements in social skills have been linked to better integration into society and desistance from crime (Maruna & LeBel, 2002). Wilson and Logan (2006, p. 23) also highlight how these improvements in 'soft skills' can effectively help in reducing reoffending.

Improvements in participants' motivation to join further education courses was a key finding, which also has important implications for desistance to crime (Henley et al., 2012; Mendonca, 2010; Wilson et al., 2009). Although the projects were open to all, many prisons chose to offer it to targeted groups, such as self-harmers or the unemployed (Wilson et al., 2008). These groups may be resistant to learning and engaging in education, however participants reported Good Vibrations to be like a 'stepping stone' to further education (Wilson et al., 2009: p. 31). Six months after completing the Good Vibrations project, participants were more open to learning and showed greater levels of engagement (Wilson et al., 2008). Wilson and Logan (2006, p. 22) found that over 50 percent of participants from the group went on to take part in other educational courses, an important finding considering the links between education, employment and a reduction in reoffending (Mendoca, 2010).

Prisoners who participated in Good Vibrations also demonstrated improvements in their relationships. This was seen in relationships between prisoners themselves, prisoners and staff and

in some cases between prisoners and their families (Wilson et al., 2008). Prisoners began to trust the staff more and saw them in a new and more positive light after the project (Wilson et al., 2009). This is important as Burnett and McNeill (2005) highlight that relationships between professionals and offenders can aid the transition to desistance if they are positive. In addition, prisoners reported many improvements within themselves, such as improved self-esteem and confidence, and there were also many emotional issues that seemed to improve (Henley et al., 2012; Wilson et al., 2008). Emotionally, participants felt less shy as a result of the project, and this was seen to continue six months later (Wilson et al., 2008). The project also expanded participants cultural awareness – not only of Gamelan culture but of the cultures of the other group members (Wilson et al., 2009).

## Research and Evaluation

Good Vibrations aims to develop the whole person – both socially and culturally in order to improve areas linked to desistance and improved well-being (Wilson & Logan, 2006). The current research seeks to investigate the influence of the Gamelan courses with convicted sexual offenders, in particular regarding their participation in psychological treatment following engagement with Good Vibrations. The present studies were conducted as a result of a research collaboration between a UK university and a UK sex offender treatment prison. The prison has a strong focus on rehabilitative programmes for the prisoners who are all convicted sex offenders, or whose current conviction includes a sexual element.

## Study 1: Quantitative study evaluating changes relating to motivation for treatment in convicted sex offenders following participation in Good Vibrations

### Research Aims

The present study aimed to ascertain if there were changes in participants in relation to readiness to change or motivation to engage with psychological treatment, and whether Good Vibrations added any additional 'value' to the standard treatment.

### Research questions

- (1) Does participating in 'Good Vibrations' musical interventions improve offender readiness and/or motivation for psychological treatment programmes?
- (2) Does participating in 'Good Vibrations' musical interventions provide a significant addition to psychological treatment outcomes (dynamic measures) as signified by incremental improvements in pre and post treatment psychometric scores?

### Method

#### Participants

Participants were recruited from four Good Vibrations workshops, which were arranged in February and April of 2014 at a UK sex offending prison for prisoners about to start psychological treatment. The groups of prisoners who were offered a place on treatment were given information about Good Vibrations and also about this research study within a group meeting prior to the start of the Good Vibrations workshop. All prisoners were made aware that the choice to take part in the research (or not) would not affect their participation (or not) in Good Vibrations, or any other treatment at the prison. Thirty-two prisoners consented to take part in the research.

A matched control group was also used to compare psychometric measures pre and post the standard psychological treatment to determine the impact of the initiative on treatment and treatment outcomes. Nineteen prisoners consented to take part in the research as part of the control group. Potential participants were approached as part of their pre-treatment induction.

#### Materials

Data were collected through the dissemination of two psychometric measures: the Corrections Victoria Treatment Readiness Scale (CVTRS) (Casey, Day, Howells & Ward, 2007) and the University of Rhode Island Change Assessment (URICA) (McConaughy et al, 1983).

The CVTRS is a self-report measure consisting of 40 items, each with a Likert scale response from one (strongly disagree) to five (strongly agree). The measure assesses the participant's readiness to partake in a cognitive skills programme –where higher scores indicate higher states of readiness (Casey et al., 2007). The treatment readiness score is derived from four subscales: (i) Attitudes and motivation (higher scores denoting a more positive attitude and greater motivation to change); (ii) Emotional reactions (higher scores indicating a greater readiness to change); (iii) Offending beliefs (higher scores denoting a belief that offending is own responsibility) and (iv) Efficacy (with higher scores denoting great sense of self-efficacy). The item scores can also be summed and used as an indicator for areas for intervention when readiness scores are low. Casey et al. (2007) recommend a cut-off score of 72 as indicative of readiness for treatment signifying that individuals who score above 72 demonstrate sufficient readiness to change and as such are in an appropriate state to engage with treatment.

The URICA consists of 32 items, and scores are split into individual stages of change – recognising that change is usually a gradual process that happens in stages. There are four stages of change recognised in the URICA: (i) Pre-contemplation; (ii) Contemplation; (iii) Preparation (Action) and (iv) Maintenance. The measure utilises a five point Likert scale where one is strongly disagree and five is strongly agree. A total Readiness to Change score is obtained by summing the items from each subscale, computing and summing the means from the Contemplation, Action, and Maintenance subscales before subtracting the Pre-contemplation mean ( $C + A + M - PC = \text{Readiness}$ ). A high score indicates greater readiness to change.

Both of the measures used have been shown to be psychometrically sound; the CVTRS yields good levels of internal reliability (Casey et al, 2007) and the URICA has been validated for use with prisoners (Polaschek, Anstiss & Wilson, 2010).

### Data Collection

The psychometric measures were carried out at three time points – (i) at the initial meeting (pre-psychological treatment and prior to participating in the Good Vibrations workshop, (ii) directly after the week long musical programme (post Good Vibrations participation and pre standard sex offender treatment ) and (iii) after completion of psychological treatment programme.

### Results

Data were inputted into Excel and imported into SPSSv22 for analysis. Of the fifty one participants, fourteen were borderline or mildly intellectually disabled (ID group); the remaining thirty-seven had

IQs above 80 and/or were recruited onto the mainstream sex offender treatment programmes for individuals without an intellectual disability or difficulties with adaptive functioning (non ID group).

### Overview of data and descriptives

In terms of treatment programmes, the fourteen ID individuals proceeded onto the Adapted Better Lives Booster treatment programme; the thirty-seven individuals in the non ID group proceeded onto the CORE sex offender treatment programme. The table below presents the relative numbers of ID and non ID individuals in the experimental and control groups.

*Table 1: Breakdown of number and percentage of individuals by research group and intellectual disability*

	<b>Intellectually disabled</b>	<b>Not intellectually disabled</b>
<b>Experimental group</b>	11 (34.4%)	21 (65.6%)
<b>Control group</b>	3 (15.8%)	16 (84.2%)

The table below indicates the number of participants for each participant group (non ID and ID) across the three potential time points: (i) pre Good Vibrations and pre-treatment, (ii) post Good Vibrations and pre-treatment (approximately one week after time point 1) and (iii) post Good Vibrations and post treatment (approximately six months post Good Vibrations, after completion of sex offending treatment programme).

*Table 2: The number of participants in each group across all three time points*

	<b>ID: Experimental</b>	<b>ID: Control</b>	<b>Non ID: Experimental</b>	<b>Non ID: Control</b>
Timepoint 1 Pre GV / Pre treatment	11	3	21	16
Timepoint 2 Post GV / Pre treatment	11	3	15	15
Timepoint 3 Post GV / Post treatment	7	0	3	4

It should be noted that at timepoint three (six months following treatment), there were substantive missing data for participants; this is a normal pattern with prisoner data where participants may move prison and/or be released post treatment..

## Reliability of scales

The reliability of each scale was checked for both ID and non ID participants (across both experimental and control groups). The table below presents Cronbach's alpha for each group (ID and Non ID) for each of the four CVTRS sub-scales (the URICA Readiness to change scale is used as a summed total score so Cronbach's alpha <sup>1</sup>has not been computed for this).

Table 3: Cronbach's alpha for ID and non ID groups for each of the CVTRS and URICA subscales

	ID participants	Non ID participants
<b>CVTRS: Attitudes and motivation</b>	Alpha = .38; (n=3)	Alpha = .67 (n=32)
<b>CVTRS: Emotional reactions</b>	Alpha = .42; (n=13)	Alpha = .57 (n=37)
<b>CVTRS: Offending beliefs</b>	Alpha = .54; (n=14)	Alpha = .60 (n=37)
<b>CVTRS: Efficacy</b>	Alpha = .24; (n=14)	Alpha = .60 (n=36)
<b>URICA: Precontemplation</b>	Alpha = .56; (n=14)	Alpha = .79; (n=37)
<b>URICA: Contemplation</b>	Alpha = .71; (n=13)	Alpha = .80; (n=37)
<b>URICA: Action</b>	Alpha = .75; (n=14)	Alpha = .74; (n=36)
<b>URICA: Maintenance</b>	Alpha = .78; (n=14)	Alpha = .81; (n=37)

Acceptable levels of Cronbach's alpha are 0.5/0.6 and above and it should be noted that the CVTRS sub-scales do not generally reach this minimal level of adequacy for the intellectually disabled participants<sup>2</sup>.

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<sup>1</sup> Cronbach's alpha is a measure of internal consistency of a scale – that is, how much the items are inter-correlated. Cronbach's alpha can range from 0.00 to 1.00 but the cut-off point, above which a scale is deemed acceptable, is typically seen as 0.50-0.60. Ideally the alpha will be above 0.70

<sup>2</sup> Where respondents do not understand what a scale item is asking, perhaps because the wording is too complex for them, Cronbach's alphas may be low indicating that some participants have not understood what they were being asked

Table 4: Comparison of mean (and standard deviation) psychometric scores pre and post Good Vibrations (timepoints 1 and 2) for non ID participants (both experimental and control groups)

	<b>Non ID: Experimental</b>	<b>Non ID: Experimental</b>	<b>Non ID: Control</b>	<b>Non ID: Control</b>
	<b>Pre GV (timepoint 1)</b>	<b>Post GV/Pre Treatment (timepoint 2)</b>	<b>Pre GV (timepoint 1)</b>	<b>Post GV/Pre Treatment (timepoint 2)</b>
<b>CVTRS: Attitudes and motivation</b>	25.25 (SD=2.70)	27.41 (SD=1.80)	24.19 (SD=3.43)	25.07 (SD=2.09)
<b>CVTRS: Emotional reactions</b>	25.10 (SD=2.86)	25.33 (SD=2.44)	25.94 (SD=3.02)	25.27 (SD=3.22)
<b>CVTRS: Offending beliefs</b>	17.71 (SD=2.39)	18.33 (SD=2.09)	17.19 (SD=1.91)	17.00 (SD=1.46)
<b>CVTRS: Efficacy</b>	14.86 (SD=2.56)	15.87 (SD=2.45)	14.44 (SD=2.63)	15.00 (SD=1.69)
<b>URICA: Readiness to change</b>	11.04 (SD=2.32)	11.28 (SD=1.89)	9.04 (SD=1.36)	9.43 (SD=1.47)

In the table above, the mean scores indicate some changes pre and post Good Vibrations. The statistical analysis of these differences is presented below.

Table 5: Comparison of mean URICA scores pre and post Good Vibrations (GV) for ID participants (both experimental and control groups)

	<b>ID: Experimental</b>	<b>ID: Experimental</b>	<b>ID: Control</b>	<b>ID: Control</b>
	<b>Pre GV (timepoint 1)</b>	<b>Post GV/Pre Treatment (timepoint 2)</b>	<b>Pre GV (timepoint 1)</b>	<b>Post GV/Pre Treatment (timepoint 2)</b>
<b>URICA: Readiness to change</b>	11.04 (SD=2.32)	11.28 (SD=1.89)	9.04 (SD=1.36)	9.43 (SD=1.47)

### Mixed 2X2 ANOVAS

A series of 2 X 2 Mixed ANOVAS were conducted to examine putative changes between timepoint 1 and timepoint 2 for the non ID experimental vs control groups.

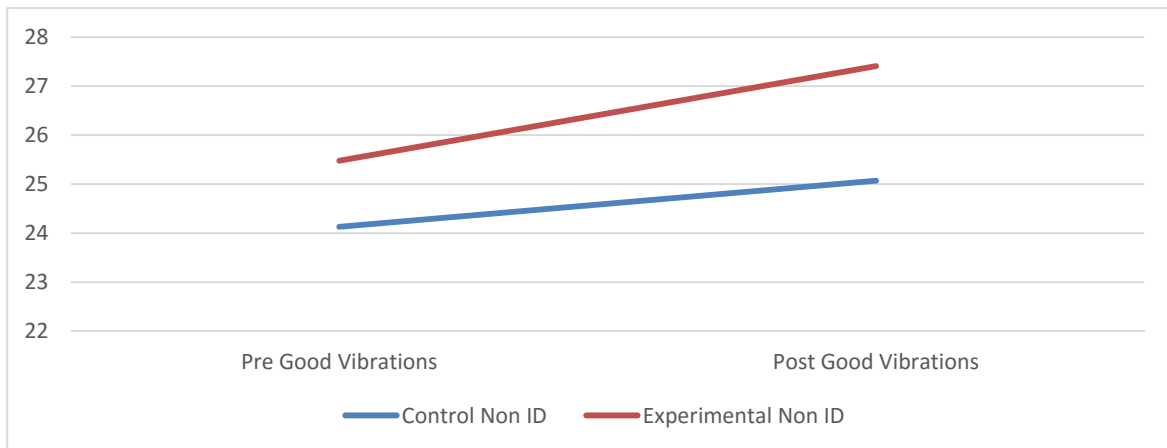
### Analysis 1: Attitudes and Motivation pre and post Good Vibrations for non intellectually disabled participants

A two-way 2 (group: experimental or control) X 2 (timepoint: (i) pre Good Vibrations and (ii) post Good Vibrations) mixed ANOVA was conducted with repeated measures on the timepoint variable.

There was a significant main effect of time  $F(1,28) = 7.04$   $p=.013$  with timepoint 2 demonstrating higher scores for attitudes and motivation in comparison to timepoint 1 (and thus participants demonstrated better attitudes and motivation post Good Vibrations at timepoint 2. There was also a

main effect of group type  $F(1,28) = 5.45$   $p=.027$  with the experimental group demonstrating higher scores than the control group. Sphericity tests were not significant. There was no significant interaction between time and group  $F(1, 28) = 0.86$ , NS. Data are presented in Figure 1 below.

Figure 1: Mean scores for CVTRS (attitudes and motivation) at timepoints 1 and 2 for non ID control and experimental groups

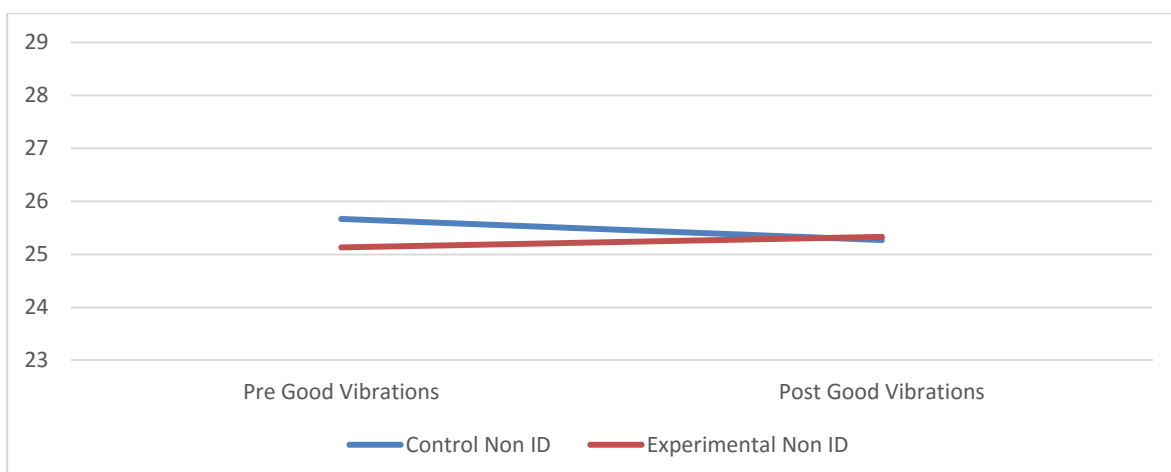


*Analysis 2: Emotional Reactions pre and post Good Vibrations for non intellectually disabled participants*

A two-way 2 (group: experimental or control) X 2 (timepoint: (i) pre Good Vibrations and (ii) post Good Vibrations) mixed ANOVA was conducted with repeated measures on the timepoint variable.

There was no significant main effect of time  $F(1,28) = 0.75$ , NS, with no significant difference in emotional reaction between timepoints 1 and 2. There was no main effect of group type  $F(1,28) = 0.0$ , NS with the experimental group demonstrating no significant difference in scores to the control group. Sphericity tests were not significant. There was no significant interaction between time and group  $F(1, 28) = 0.68$ , NS. Data are presented in Figure 2 below.

Figure 2: Mean scores for CVTRS (emotional reactions) at timepoints 1 and 2 for non ID control and experimental groups



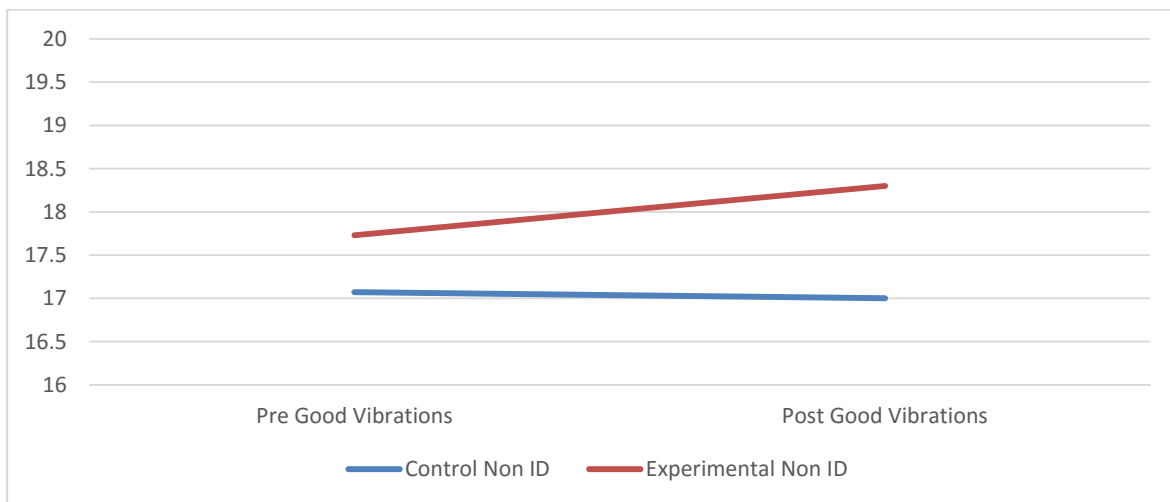


### *Analysis 3: Offending Beliefs pre and post Good Vibrations for non intellectually disabled participants*

A two-way 2 (group: experimental or control) X 2 (timepoint: (i) pre Good Vibrations and (ii) post Good Vibrations) mixed ANOVA was conducted with repeated measures on the timepoint variable.

There was no main effect of time  $F(1,28) = 0.68$ , NS, between timepoints 1 and 2 for offending beliefs. There was no main effect of group type  $F(1,28) = 2.27$ , NS, with no significant differences between the experimental group and the control group. Sphericity tests were not significant. There was also no significant interaction between time and group  $F(1, 28) = 1.05$ , NS. Data are presented in Figure 3 below.

*Figure 3: Mean scores for CVTRS (offending beliefs) at timepoints 1 and 2 for non ID control and experimental groups*

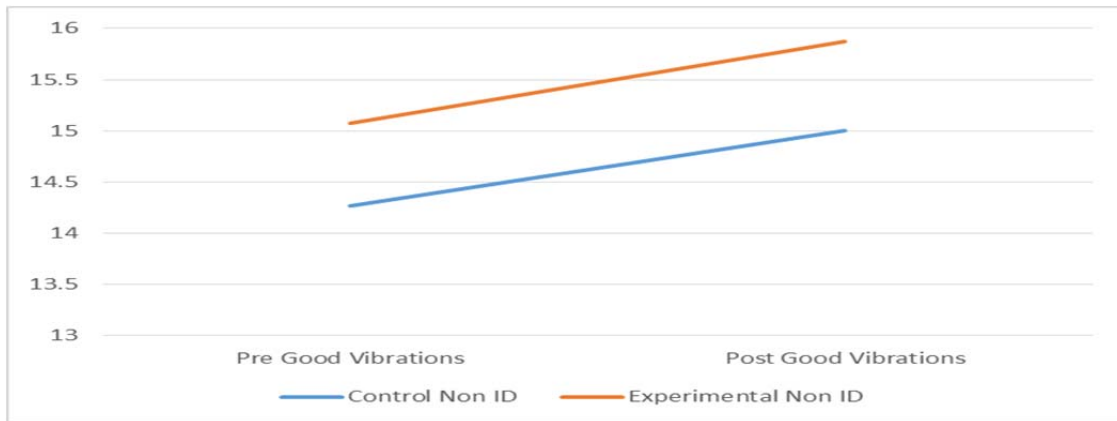


### *Analysis 4: Efficacy pre and post Good Vibrations for non intellectually disabled participants*

A two-way 2 (group: experimental or control) X 2 (timepoint: (i) pre Good Vibrations and (ii) post Good Vibrations) mixed ANOVA was conducted with repeated measures on the timepoint variable.

There was a significant main effect of time  $F(1,28) = 6.73$   $p=.015$  with timepoint 1 demonstrating lower scores for efficacy in comparison to timepoint 2. There was no main effect of group type  $F(1,28) = 1.00$ , NS, with experimental group scores not significantly different to the control group. Sphericity tests were not significant. There was no significant interaction between time and group  $F(1, 28) = 0.01$ , NS. Data are presented in Figure 4 below.

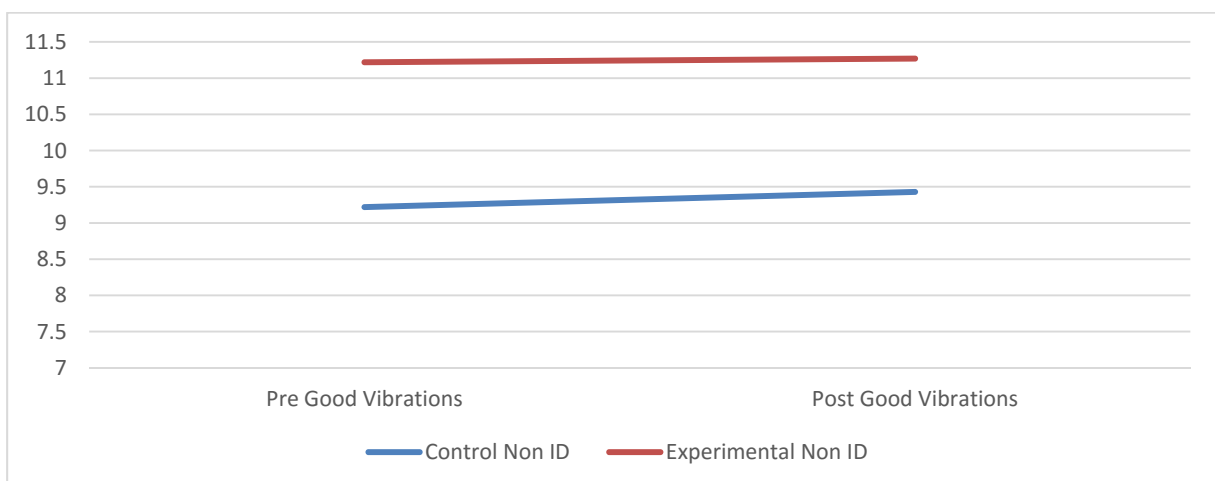
*Figure 4: Mean scores for CVTRS (efficacy) at timepoints 1 and 2 for non ID control and experimental groups*



*Analysis 5: URICA Readiness to change pre and post Good Vibrations for non intellectually disabled participants*

A two-way 2 (group: experimental or control) X 2 (timepoint: (i) pre Good Vibrations and (ii) post Good Vibrations) mixed ANOVA was conducted with repeated measures on the timepoint variable. There was no significant main effect of time  $F(1,28) = 0.18$ , NS between timepoints 1 and 2 for readiness to change. There was a significant main effect of group type  $F(1,28) = 11.49$ ,  $p=.002$ , with experimental group scores significantly different to the control group. Sphericity tests were not significant. There was no significant interaction between time and group  $F(1, 28) = 0.06$ , NS. Data are presented in Figure 5 below.

*Figure 5: Mean scores for URICA at timepoints 1 and 2 for non ID control and experimental groups*



## Discussion

This study used a quasi-experimental design, with some individuals offered places on the Good Vibrations workshops (and research) before moving onto their sex offender treatment programmes compared to individuals about to move on to sex offender treatment programmes but not offered Good Vibrations workshops (only two GV courses were offered so most individuals going onto treatment could not be offered places on GV). Two groups of participants were recruited for both experimental and control groups – intellectually disabled and non intellectually disabled prisoners. These groups were split in the analysis as it was hypothesised that the impact of GV might be different for intellectually disabled and non intellectually disabled prisoners.

One of the problems with conducting quantitative research is the use of psychometric scales with intellectually disabled prisoners. Despite the research team utilising scales that had previously been used for ID populations, and trying to improve comprehension by reading the scales aloud to ID prisoners and checking understanding, the Cronbach's alphas for the ID participants were too low for data to be usable for all CVTRS subscales. The URICA Readiness to change scale demonstrated an appropriate Cronbach's alpha even with ID participants; however, there only a few ID participants returned to give data post Good Vibrations and post treatment, meaning the control data were insufficient for analysis.

There were significant pre and post course differences for the non ID offenders and controls on the CVTRS subscales of 'attitudes and motivation' and 'efficacy'. The 'attitudes and motivation' subscale focuses on attitudes and beliefs about programs and the desire change. The results showed that post-course non-ID offenders endorsed more positive beliefs about programmes and a greater desire to change. The subscale 'efficacy' focuses on an individual's perceived ability to participate in programs. Thus it appears, for non-ID offenders, that the good vibrations intervention contributes to increased desire to change and willingness to participate in programs (Casey, Day Howells & Ward, 2007). While participation in this particular program may not increase general motivation to change per se, the results suggest that it contributes to a desire to change offending behaviour and engage in offence-specific treatment. Casey et al (2007) have been critical of the use of the trans-theoretical model of change (TTM) which underpins the URICA as it is not offence-specific. It may be that completing the Good Vibrations course assists with an individual's momentum for change and this is related to an offender's initial desistance. For example, an offender is unlikely to change if they do not take (or make the most of) opportunities to change (Gobbels, Ward & Willis, 2012). Increasing an offender's desire to change and participate in programmes could contribute to 'decisive momentum', the openness to change and opportunities to change, which is the first phase of sexual offender

crime desistance (Gobbels, Ward & Willis, 2012). It also seems the Good Vibrations intervention may promote and increase treatment readiness prior to program participation in further accredited programs, this process can contribute to maximising treatment goals on further programs and fuller engagement in treatment (Ward, Day, Howells & Birgden, 2004).

There were limitations with both experimental and control individuals in the post Good Vibrations and post treatment phase. The majority of the individuals had moved on or been released so the dataset was not complete and insufficient to conduct a robust analysis. More fundamentally there was a critical issue in the matching and selecting of the experimental and control group participants. The key issue being that all ID participants had already participated on the accredited programme 'Becoming new me'. In essence, ID participants were at a different treatment point than the non-ID participants and this would have undermined any putative comparisons between ID and non ID participants. Regardless, further research needs to ensure that the groups (control vs experimental) are properly matched. Indeed, selection and matching of groups are crucially important for brief non-accredited programmes in order to contribute to the evidence-base of their effectiveness (Blagden & Perrin, 2015). In particular, participants for this intervention should not have participated in the Good Vibrations either at the current prison or at a previous one; moreover, ideally none of the participants of the research (either experimental or control conditions) should have previously completed group treatment if the evaluation is intended to capture changes in readiness for treatment from a true baseline. It appeared, from the quantitative findings, that the participants who became part of our experimental group were slightly different to the control participants, and this motivation to engage with anything (be it psychological therapy or musical therapy) may have been an explanation for the different baseline starting points for some of the psychometric measures.

## Study 2: Qualitative study exploring the experiences of prisoners participating in the Good Vibrations musical percussion workshops.

### Research Aims

This study aimed to explore the experiences and perspectives of individuals who engaged with the Gamelan 'Good Vibrations' workshops. In particular, it was interested in exploring how participation in these groups may have influenced their motivation, engagement and experience of subsequent psychological treatment programmes.

### Method

#### Participants

Participants were recruited from an initial sample pool of 25 adult males who all participated in the Gamelan courses during their sentence at a UK sex offender prison. They also previously volunteered to participate in a quantitative research study examining potential effects of the courses (in preparation). From this initial sample pool, 23 prisoners were contacted via letter explaining the purpose of the study. Of these 23 prisoners, five ( $n = 5$ ) agreed to take part in the present research. Participants ranged in age from 27 to 52 years ( $M = 38$ ).

#### Data collection

Prior to conducting the research, necessary ethical approval was granted by the university and the HM Prison Service Ethics Committee. Prisoners from the initial sample pool were contacted by letters, explaining the purpose of the research. Five prisoners indicated their interest in participating in the study and were met by one of the researchers to explain participation in more detail. All five agreed to take part in the study following this meeting and were interviewed in 2015. Interviews were conducted in dedicated interview rooms.

The interviews were semi-structured and lasted between 20 and 58 minutes ( $M = 41.2$ ). Through consultation with the research team of this research project, the interview schedule was developed and interviews focused on the following areas:

- . The prisoner's thoughts and feelings prior to the start of the Gamelan course
- . The prisoner's attitude and opinion about the course
- . The prisoner's thoughts about potential benefits of the course
- . The prisoner's participation in the offending behaviour programme and the potential impact of the Gamelan course

. The prisoner’s thoughts and feelings reviewing participation

Participants’ responses were captured via recording on Dictaphones and later transcribed verbatim by the researchers.

### Analysis

The data were analysed using thematic analysis, which is an approach to analysing qualitative data and reporting patterns and themes within this data that relate back to the research question. The aim is to capture rich detail in the data and to interpret it in a way that includes the range and diversity of experiences (Braun & Clarke, 2006). Thematic analysis was chosen as it is not bound to an explicit theoretical framework or position and is therefore seen as more flexible (Braun & Clarke, 2006). Furthermore, thematic analysis was believed to be an efficient method to capture the most meaningful themes within the scope of this research project, as it focuses mainly on finding patterns of meaning across all participants, instead of having a focus on each individual data item, while still being able to capture divergence and differences in data (Braun & Clarke, 2006; Smith, Flowers, & Larkin, 2009). Data analysis followed the steps outlined by Braun and Clarke (2006), commencing with thorough reading of all transcripts, followed by the generation of initial codes and interesting patterns, through to collating those codes into meaningful codes and gathering relevant data to each theme and finishing by reviewing and interpreting the themes.

### Results

Following the thematic analysis of the dataset, five superordinate themes were identified, illustrating prisoners’ experiences with the Gamelan music courses: Social skills; Managing emotions; Increase in confidence; Escaping the prison routine and Desire for the course to last longer. Three of the superordinate themes encompassed subordinate themes. Table 1 presents an overview of the superordinate and subordinate themes. This report focuses on the first four themes. The desire for the course to last longer was a common aspect in all five interviews and represents the positive experiences of participants with the course.

Table 6. Superordinate and Subordinate Themes

Superordinate themes	Subordinate themes
Social skills	Working cooperatively
	Effective communication
	Effective leadership

	Building relationships
Managing emotions	Relaxation
	Release of emotions in a safe way
	Expressing emotions
Increase of confidence	Escaping the prison routine
	A way to forget about being in prison
	Changing the routine
	Desire for the course to last longer

### Transcription notations

The interviewer is identified by the letter 'I' and participants are identified as P1, P2, etc.

### Superordinate Theme 1: Social skills

There was a consensus from all participants in regard to having improved different social skills. Social skills have been defined in the literature as “a set of competencies that a) allow an individual to initiate and maintain positive social relationships, b) contribute to peer acceptance and to a satisfactory school adjustment, and c) allow an individual to cope effectively with the larger social environment” (Walker, 1983, p. 27). The improvement was highlighted through a variety of aspects, which are represented by the following subordinate themes.

#### *Working cooperatively*

Participants highlighted the importance of working together as a team in order to create different musical pieces and “*put together a performance*” (P1). Prison environments can be quite isolated environments and can promote feelings of being left on one’s own (Chen et al., 2014). By sharing a common experience such as the creation of songs and performing in front of an audience, group members became aware of the benefits of working collaboratively in a team, which is likely to reduce feelings of isolation.

#### *Effective communication*

Interviews highlighted that essential skills of communication were required from participants in order to work effectively in a group and produce the music that was performed at the end. Participants identified that one important aspect was the ability to listen to each other and take into

account different views and opinions. Additionally, participants acknowledged the fact that it was important for group members to be polite and respectful towards each other in order to reach their common goal.

### *Effective leadership*

Another aspect that arose during the interviews was the importance of effective leadership. It was highlighted by participants that leadership was essential in order to keep the group together and focused, in fact, in order to reach their common goal of performing in front of an audience at the end of the course.

*Yes we had good leadership but as I said it wasn't forceful, it wasn't "you have to do this, you have to do that" it was "what would you like out of it", you know what I mean? We all worked together (P1).*

This extract highlights that the group was aware of the importance and benefits of leadership but was at the same time able to incorporate this in a respectful manner. Although, leadership is not directly categorised as a social skill, research links social skills to leadership in regard to its effectiveness. Existing research has demonstrated that the ability to express emotions is a key component of effective leadership (Groves, 2006; Reichard & Riggio, 2008), in particular, expressing positive emotions positively affects group members (Bono and Ilies, 2006). Effective leadership is therefore suggested to be linked with social skills such as self-expression, emotional control and emotional sensitivity (Riggio & Reichard, 2008) and can thus be argued to be a valuable tool for practicing such social skills.

Furthermore, during a free play exercise, each prisoner had the opportunity to conduct the rest of the group and instruct how certain instruments should be played. As daily prison life does not give prisoners many choices or possibilities to express themselves freely, individual qualities may be neglected (Chen et al., 2014). Through the conducting exercise, participants had the chance to express their wishes, to lead the group and to take over responsibility. One prisoner said:

*It's good to be in control of something every now and then (P3).*

This highlights how much the exercise of conducting was appreciated by prisoners. Although, some stated that it was difficult at first, they all highlighted the benefit it had for them. By encouraging prisoners to take over responsibility for themselves and others in an environment where things are usually planned ahead for them, they may potentially develop ideas on how to incorporate skills, such as those required when leading a group of musicians, into their daily prison life as well as life outside of prison.



### *Building relationships*

*I talk a bit more. Before, if someone asked me, I would have been “Yeah, yeah, yeah”. So that has improved for me. And I am talking more to inmates and staff...Because it helps to build friendships and bonds (P4).*

The above quote highlights participants' willingness to be more open with staff members and other prisoners. The interactions with instructors and other group members have likely led to an increase in trust towards others. Generally, prisoners have an inherent mistrust for verbal disclosure (Gussak, 2007). Keeping to oneself and being rather silent may act as a defence mechanism helping to self-preserve and avoid showing weakness and vulnerability, which in turn protects from others trying to take advantage (Gussak, 2007). The fact that prisoners became more open with staff and other prisoners suggests that they felt less need to self-protect. As highlighted by the above extract, this also projected onto participants' overall life in prison, resulting in a build-up of more relationships throughout the prison.

### *Superordinate Theme 2: Managing emotions*

#### *Relaxation*

*When you are on the GV and you came back to your cell, you were all relaxed and you didn't have any trouble going to sleep that night. Because you still had the music in your head, which was relaxing (P5).*

All participants agreed that the music played in the Gamelan course helped them to relax. As highlighted above, the environment of the prison and the stigma of being incarcerated can cause stress (Crewe, 2011; Schnittker & John, 2007). Research has shown that individuals who have a history of incarceration are more likely to suffer from illnesses and poor physical health such as infectious diseases, chronic back pain or high blood pressure as a result of stress (Binswanger, Krueger, & Steiner, 2009; Massoglia, 2008). Therefore, it can be argued that it is important for prisoners to develop good coping strategies and to establish ways that help them to de-stress and relax. As the data derived from the interviews highlighted, prisoners experienced the Gamelan course and the music that was played in the sessions as relaxing, suggesting that it functioned as a way of coping with stress.

The above extract also indicates that the relaxing effect was not only perceived for the hours of the course but also continued until night times, helping this individual to fall asleep. In line with this, previous research has shown that prisoners who engage in activities, such as sports or discussion

groups, experience less problems with insomnia because the activities present ways to cope with stressful events (Elger, 2009).

Interviews additionally highlighted that the relaxing effect was also perceived to last for the time in between the Gamelan course and the commencement of the treatment group, in most cases one or two weeks following the end of the music course. The time prior a treatment group can be challenging to prisoners, in particular if they have not completed previous group work. One prisoner described the time as worrying and involving “*butterflies in your stomach*” (P5). It can be argued that the Gamelan course functioned as a ‘bridge’ between the course and the treatment group, helping participants to feel calmer and relaxed.

### *Release of emotions in a safe way*

Another prisoner identified music not only as a strategy for relaxation, but as a coping mechanism to manage his emotions, in particular anger.

*It’s really difficult within the prison system, to take your anger out. You have to have control of your anger and your emotions in here. And it’s kind of like you can’t, it’s really difficult to release that anger in a positive way. Um, I mean, on the outside, if I was angry, I’d just go and sit by my drums and take my anger out there. Um, in here it’s quite difficult, you haven’t got a set of drums (P3).*

Generally, in today’s society, anger is viewed as disruptive and unwanted. One of the main reasons for this is the fact that anger has been shown to be linked to violent and assaultive behaviours, which in turn has led to the awareness of the importance of anger management to increase substantially (Hollenhorst, 1998). Although research agrees that anger does not directly cause aggression, it has been shown to increase the likelihood of aggressive behaviour (Novaco, 1997). Therefore, in order to guarantee custodial safety, prisoners are required to control their emotions, in particular anger. However, a common risk factor among the offender population and in particular sex offenders, is poor emotion regulation (Douglas & Skeem, 2005), suggesting that most prisoners will need support in order to develop these abilities. As the above extract highlights, the participant experienced the music played in the Gamelan course as a coping mechanism for his anger. He identified that the music allowed him to replace the emotion of anger by different emotions and constructive behaviours, suggesting that it can provide the necessary support in order not to act upon his anger. In line with this, research has shown that music can increase the effectiveness of anger management programmes for offenders (Haakvoort, 2002; Haakvoort, et al., 2013) and adults and adolescents with a history of physical, emotional or sexual abuse (Slotoroff, 1994). This research highlighted that music can be applied to allow participants to express their anger in a controlled

setting, affirming a safe distance between the offender and the therapist, which in turn improves participants' awareness of anger management deficits.

### *Expressing emotions*

Besides being able to manage their emotions and to transform negative emotions into a positive behaviour, participants also identified that they became more able to express their emotions, in particular in front of people they did not know, such as the instructors of the course. Research suggests that many offenders have been abused in early years (Dallaire, 2007), often before language and abstract thinking has developed and that this trauma can be strongly imprinted in the body, hindering the expression of own sensations and emotions (Skaggs, 1997). As suggested, music with its sound waves and vibrations can stimulate sensory images, which consequently can trigger heightened awareness of emotions, resulting in an improved ability to express these (Gardner, 1990; Haakvoort et al., 2013; Juslin, 2009).

Being able to express emotions can also have a positive influence on the ability to identify and manage emotions. As research has shown, music can raise emotional awareness (e.g. Haakvoort et al., 2013) and this in turn is required in order to constructively change the emotion. It can be argued that being able to express emotions is a first step towards understanding their impact, which may trigger a willingness to manage and change them.

### *Superordinate Theme 3: Increase of confidence*

As mentioned above, many offenders come from disadvantaged backgrounds, which may have included early trauma, such as violence or abuse (e.g. Driessen, Schroeder, Widmann, Schönfeld, & Scheider, 2006; Mandelli, Carli, Roy, Serretti, & Sarchiapone, 2011). Research suggests that this can leave them with a poor sense of confidence and a great fear of rejection and negative evaluations (e.g. Fleming, Levy, Kaldor, Donovan, & Butler, 2001). In particular sex offenders with paedophilic interests have been shown to suffer from low self-confidence (Hanson & Harris, 2000; Miner, Romine, Robinson, Berg, & Knight, 2014). In addition, being stigmatised as criminals and experiencing the prison environment as a stressful place can negatively influence prisoners' self-confidence and trust in their own abilities (Chen et al., 2014). Almost all participants felt that the Gamelan courses helped them to develop a sense of importance and achievement, which in turn increased their self-confidence. Participants mentioned that in the past, they used to easily give up on things or not try them at all. In particular, they highlighted that group work was something they used to avoid due to a lack of confidence and ability to work in a group setting.

*Well it, it helped me in a way to not quit before I try it, and give it a try before I knock it. It's given me some experience in making music, and also working as a part of a group. I didn't think I could manage to be part of the group but after doing that, I can, knowing that I can be part of a group, instead of thinking I rather do it on my own (P5).*

Additionally, one prisoner proudly explained that the Gamelan course had inspired him to write own songs, one of which he performed in front of all members and facilitators of his treatment group. It can be argued that this indicates that a sense of achievement, leading to an increase in confidence, also has the power to inspire prisoners and become a resource of personal growth. Experiencing this achievement and developing an idea of what is meaningful to the individual, may further encourage prisoners to take more responsibility for themselves, inside but also outside of prison (Chen et al., 2014). Furthermore, research on Musical Performance (Amir, 1999), a therapeutic tool in which people represent themselves through musical pieces, has shown that the tool can significantly increase peoples' sense of purpose in life (Bensimon & Gilboa, 2010). It can be argued that the way the above participant introduced himself to his treatment group by performing his self-written songs, is similar to the way Musical Performance affects participants' sense of purpose in life. Purpose in life has been defined as "coherence and purpose in one's existence, the pursuit and attainment of worthwhile goals" (Recker & Wong, 1988, p. 221) and is suggested to be one of the most important driving forces for humans (Frankl, 1997). A lack of it can result in various negative consequences such as poor emotional well-being or drug abuse (Ryff, 1995; Frankl, 1978). One common way to determine purpose of life is by discovering creativity within oneself (Frankl, 1997) as it can be suggested to have been the case with the above participant.

#### Superordinate Theme 4: Escaping the prison routine

Almost all participants highlighted that the Gamelan course offered them an opportunity to be temporarily distracted from the realities of prison. For some participants it was the opportunity to engage in a different activity compared to everyday routines, for others it was about letting the mind wander and imagining the self at a different place.

#### *A way to forget about being in prison*

*The only time you knew you were in prison was when you came back to your cell. And found out that you weren't actually in that musical land, creating music, you were actually in prison (P5).*

This quote highlights that the possibility of making music while in prison became a way for the participants to momentarily escape the realities of prison life. The above participant expressed this

by saying he escaped to a “musical land” and forgot about where he really was. The sense of escaping reality is a common therapeutic outcome reported in music therapy literature. For example, Maratos (2004) described how participants were momentarily able to forget their diagnoses of mental illnesses through the interaction with music. In a medical setting, Hogan (1998) described how music therapy enabled terminally ill patients to temporally escape the realities of their illness and Daveson (2006) highlighted the influence of musical interactions on feelings of transcending time and timelessness. Additionally, Tuastad and O’Grady (2013) described a sense of freedom experienced by male and female prisoners, which enabled them to temporarily escape the authoritative and institutionalised environment but also to build ties to the outside reality. In general, it is suggested that music therapy has the potential to alter relationships with reality, which, as research shows, has various positive effects.

Another participant also expressed the ability of the music to “take you away” but also highlighted increased feelings of relaxation as a consequence:

*When people got a tune going, it was, for some reason it took you away from that room and it relaxed you (P4).*

In contrast to the first participant, this statement does not directly refer to music’s ability of enabling to transcend from the entire prison reality but highlights how momentarily forgetting about one’s surrounding can lead to an increase in feelings of relaxation.

### *Changing the routine*

Participants also described the Gamelan course as a way to experience a change to their daily routine of work and life in prison.

*It’s better to do the GV before you do any courses, because that will relax you and you get like a frame of mind of changes instead of being stuck in the normal routine you do (P5).*

One prisoner also mentioned that participating in the Gamelan course prior to joining the sex offender treatment programme, put him into a “frame of mind of changes”, rather than “being stuck in the normal routine” (P5) of going to work every day and following day-to-day procedures until the start day of the interventions programme. He highlighted that this was helpful in slowly preparing him for the course, its challenges and the changes that he would be aiming to make throughout the programme.

## Discussion

The aim of this qualitative study was to explore prisoners' experience with an Indonesian percussion music (Gamelan) course, which was offered to them prior to the beginning of their offender behaviour treatment programme, in this case a sex offender programme. One of the main aims was to explore prisoners' general thoughts and feelings about participating in this course. A further aim was to gain a better and more in-depth understanding of the potential benefits of the course. As, currently, the music course has not been fully established as an intervention at the present prison but is occasionally offered as a weeklong course, the author was particularly interested in exploring the potential benefits of introducing a music course as a 'pre-course' to the offending behaviour programmes, which are part of many offenders' sentence plans. Although research in the area of music therapy in correctional settings is increasing, no studies have yet particularly investigated the possibility of offering a music related group intervention in order to improve prisoners' readiness for treatment groups.

Generally, all participants believed that the music course had benefited them in several ways and in particular, it was highlighted to have been beneficial in regard to their participation in offender behaviour programmes. One important benefit that was mentioned by all participants was the improvement in social skills, for example, working cooperatively in a team, communicating effectively, building relationships and practicing effective leadership. Research has highlighted that motivation to change is influenced by the interpersonal context such as the relationships among treatment group members (Miller & Rollnick, 2002). Therefore, it is argued that the Gamelan course increased prisoners' motivation to change through providing the context of positive interpersonal relationships.

The study also found that the music courses had positive influences on participants' emotional states and their ability to de-stress and feel more relaxed. This positive effect was not only present during the course but also remained in the hours afterwards and in the days or weeks between the course and the start of the treatment programme. This is an important finding as there is now consistent support that individuals who sexually offend have problems in the regulation of affective states and that this contributes to the offence process (Blagden, Lievesley & Ware, in press; Gillespie et al., 2012; Langton & Marshall, 2000). Indeed the importance of affective states is reflected in having 'socio-affective functioning' as one of four risk domains used in the assessment tool the structured assessment of risk and need (SARN) (Webster et al., 2006). In both adult and child offenders problems in the management of affective states have been associated with causal pathways to sexual offending. Thus the interventions contribution to emotional regulation and release may assist

with the change process of the individual offender. In addition to the potential positive effects on criminogenic needs, there were also reported positive effects of stress levels, which has been found to impact on physical health (Binswanger, Krueger, & Steiner, 2009; Massoglia, 2008), research has shown that feelings of calmness and relaxation are likely to lead to positive moods (e.g. Hull & Michael, 1995). Positive mood in turn has been found to correlate with pro-social behaviour and the willingness to help others (George, 1991; Isen & Levin, 1972). This is likely to have valuable impacts on the general climate within the prison but also on participants' behaviour in the subsequent treatment groups, which among other aspects require group members to be supportive and respectful towards each other. In addition to influencing participants' emotions and emotional states, the study highlights the power of music to act as a medium to release negative emotions, such as anger, and transform them into constructive behaviours.

Further analyses indicated that prisoners felt more confident about working in a group as a result of participating in the Gamelan course. As group work in general and offender behaviour programmes in particular, require members to openly participate in discussions as well as more practical exercises. It can be suggested that members who lack self-confidence and do not believe in their ability to cope with being in a group, are likely to encounter difficulties or might even refuse to participate. Research has shown that engagement in treatment groups depends on self-confidence and the level of personal contribution (Dingle, Gleadhill, & Baker, 2008). It can be argued that by increasing these factors in advance, participants will be more likely to show higher willingness of engagement during the treatment programme.

### Limitations

As discussed, the music courses may have positive effects on prisoners; however, there are a number of limitations to this study. First, some of the participants showed lower intellectual capacities. Despite careful consideration of the interview style and individual questions, this might have affected participants' ability to fully comprehend and provide detailed answers to the interview questions. Furthermore, some of the participants had taken part in the Gamelan course up to 18 months before the interview was conducted, which might have affected their ability to recall all relevant details. Additionally, the sample purely consisted of sexual offenders, which limits the possibility to generalise the results. Although this is beyond the scope of this research, it is argued that the emerging themes did not purely correspond to treatment needs and risk factors of sex offenders and might therefore also apply to other offender groups.

## General Discussion and Conclusions

The Good Vibrations intervention was found to quantitatively impact on non-ID offenders desire to change and participate in treatment. The programme also was found to qualitatively assist with the release and management of emotions. This is important for offender reform because in order for an offender to change they need to be open to change i.e. they must possess the cognitive and emotional capacities to capitalise on opportunities to change (Gobbels, Ward & Willis, 2012). It appears the Good Vibrations intervention contributes to this.

Despite the limitations of these studies, the results underline the need for future research that will further enable the investigation of the benefits of music-centred interventions with regard to prisoners' overall process of rehabilitation. For example, a controlled trial with one condition participating in the offender behaviour programme as usual and the other condition participating in a music intervention followed by the treatment group will help to quantify what a 'pre-course' music intervention may add to the programme. It may also be beneficial to investigate whether the attendance in a music intervention leads to better outcomes of the offender behaviour programmes, such as a decrease in risk levels. Additionally, it may be insightful to investigate whether the length of the music course influences how the course is perceived and to what extent it might influence factors such as motivation and engagement to participate in the treatment group as well as the willingness to change. Future research may wish to focus on individuals who have not previously had any psychological or group treatment, and the experimental groups for future research should comprise of individuals who have not previously had the opportunity to participate in Good Vibrations. Measures that have consistently been shown to be ID-friendly should be piloted before use in the prison. Other suggestions for future research would be to focus not on readiness for treatment (if the prison is already one with a therapeutic regime) but to explore changes in individuals in light of protective factors – for some individuals, Good Vibrations may help to give them purpose, help with communication skills and team building, help prisoners take some responsibility for themselves (and to have modelled the need for all individuals to work together and to take responsibility or themselves) to produce something that everybody is proud of – and to have their achievements celebrated by an audience at the end of the week. This may be one of the most significant boosts that isolated individuals with low self-esteem will have had – and certainly the qualitative results indicate that the repercussions of this may have meaningful and useful consequences for them generally.



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## Conflict of Interests statement

Both of the studies presented in this research were unfunded, completed at the request of the prison governor of the participating prison, thus no money was received from Good Vibrations in the completion of this research.

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