

Systematic Review

Music Making Interventions with Adults in the Forensic Setting – A Systematic Review of the Literature – Part I: Group InterventionsBiljana Vrancic Coutinho¹, Anita Lill Hansen^{2,3}, Leif Waage³, Thomas K. Hillecke¹, Julian Koenig⁴¹School of Therapeutic Sciences, SRH University Heidelberg, Heidelberg, Germany²University of Bergen, Department of Clinical Psychology, Bergen, Norway³Centre for Research and Education in Forensic Psychiatry, Haukeland University Hospital and Correctional Service, Region West, Bergen, Norway⁴Department of Psychology, The Ohio State University, Columbus, OH, USA**Abstract**

The purpose of this systematic review of international research is to summarize the available literature on active music making interventions with adult offenders in forensic settings (i.e. forensic psychiatry or correctional facilities at different security levels). A systematic search of 13 electronic databases according to the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) statement was employed. 28 articles fitting the inclusion criteria were included in the review. The search revealed mainly qualitative and narrative reports including articles on group music therapy, educational music making, choir interventions, individual music therapy sessions and musical projects. The musical interventions are described in detail to provide therapists with ideas on how to set up session with clients in this particular situation and to help understand the possible impact of musical interventions in the forensic setting. Furthermore, implications from the current evidence and ideas for future research are discussed. Note: Due to the length of the review it is published in two subsequent issues. This is the first part of the review focusing on group interventions. The second part of the review is published in the subsequent issue of *Music and Medicine* focusing on case studies and established music programs in the forensic setting.

Keywords: *Forensic, Music, Offender, Prison, Review*multilingual abstract | mmd.iammonline.com**1 Introduction****1.1. Background and published works**

Music and music therapy is nowadays present in many rehabilitation programs for offenders in penal institutions [1,2]. Regarded as a special field of work for music therapists [1], references indicate the use of music in forensic institutions back in the 19th century. Back then, music was used in an innovative penal system aiming at the rehabilitation rather than the punishment of prisoners. Captain Alexander Maconochie - the superintendent of the British penal settlement on Norfolk Island - introduced music to stimulate moral qualities such as the love of one's country and hope for the future in convicts [3].

A historical review of the literature on music education in prisons [2] illustrates that since the mid-nineteenth century musical ensembles existed in prisons. During the late 1800s, several newspaper articles published in *The New York Times*, *The Washington Post* and *The Post* reported about choirs in prisons. Except for Hash's article [4], (an extensive documentation of the history of the *Chicago Reform School Band* founded around 1862) references to similar music programs before the 20th century are only found in newspapers [2]. In 1924, Willem van de Wall [5] - a pioneer in music education - noted that "music is the most efficient general disciplinarian and moral agent in prison management, effecting: the change of bad feelings into good ones [and] the substitution of constructive habits for destructive ones" [5]. Lee [2] reports that after Van de Wall, at least eleven academic final theses dealing with the topic of music education in prisons had been written between 1956 and 1997 [6-16].

Since then, music was often mentioned as an effective part of treatment programs for prison inmates and mentally ill offenders. In 1982, Cooke and Cooke explored an integrated treatment program in more than a hundred mentally ill offenders over more than three years, and found that music therapy was very successful [17]. In 1996 van der Laan and Hoeven [18] presented such an integrated treatment program for patients with substance abuse disorders in a Dutch forensic hospital. Besides psychotherapy and sports, music lessons in

PRODUCTION NOTES: Address correspondence to:

Biljana V. Coutinho, School Of Therapeutic Science, SRH University Heidelberg, Maria-Probst-Str. 3, 69123 Heidelberg, Germany, E- mail: Biljana.Coutinho@hochschule-heidelberg.de | COI statement: The authors declared that no financial support was given for the writing of this article. The authors have no conflict of interest to declare. The work is based on the master thesis of the first author that was awarded with the SRH Innovation Award.

preparation of a concert helped the clients to gain new perspectives. Dunphy [19] described the positive effect of an annual arts program (“Keeping the Faith”) in a correctional center for women that was observed in an increase in self-esteem as well as change in attitude and behavior of the inmates. Another example illustrating how art programs may affect the inmates’ lives is given by Brewster [20]. The qualitative study revealed that 25 years after participating in the “California Arts-In-Corrections music program”, some former inmates still used the skills they learned during the program to earn a living (e.g. through music making or building instruments) [20]. Considering the costs and benefits of the program from the social, taxpayer and individual perspective, the program was found to be cost beneficial [21]. Furthermore, a study on parole outcome by the California Department of Corrections from 1980 till 1987 found that there was a significant reduction in the number of former participants that returned to custody compared with the general population of parolees in the California Department of Corrections [22].

Mentioning several articles [23-31] Lee [2] describes that in the beginning of the 21st century, research on music in prisons increased enormously. Different journals took up the growing interest in this particular field of research. In 2002, the journal *Music Therapy Perspectives* [32] printed a special issue devoted to music therapy in the correctional and forensic settings. Another special issue on *Criminal Justice and Music* was printed in 2010, by the *International Journal of Community Music* [33], and in 2012 the journal *The Arts in Psychotherapy* [34] presented a special issue on the topic entitled *Creative Art Therapies and Social Justice*, that displayed the presence of music with respect to social justice issues.

The positive potential of music is also reflected by several individual projects funded by national organizations around the globe. Funded by the European Union the *Art and Culture in Prison* project [35] fosters art programs in prisons. In New Zealand the *Art Access Aoteaora* [36] works to increase artistic opportunities for marginalized people including the prison population. Independent initiatives such as *Jail Guitar Doors USA* [37] or the German initiative, *Rock im Knast* [38] aim to provide instruments and campaign for music in prisons. Furthermore, several charity trusts such as *Good Vibrations* [39] and the *Prison Arts Foundation* [40] focus on prison work and promote arts for offenders. Just to mention a few, in Northern Ireland, the *Koestler Trust* [41] awards, exhibits and sells artworks made by prisoners just like the *Irene Taylor Trust: Music in Prisons* [42] which is committed to support prisoners’ rehabilitation by bringing creative music projects to prisons and runs musical programs for ex-prisoners throughout the UK since 1995. Internet presences such as the website of the Department of Justice of the German federal state Rhine–Westphalia [43] also aims to promote art in the penal settings.

Several research and treatment approaches gained public attention within the last years. For example, authors from the

Netherlands reported that art therapies - including music therapy - are a regular and fully-recognized component in the treatment of forensic psychiatry patients in the Netherlands [44,45]. Reflecting the Dutch tradition of similar methodological approaches within research on different art related therapies, Smeijsters and Cleven [45] undertook a qualitative inquiry with 31 art therapists working in the Netherlands and Germany to reveal consensus-based areas and interventions of treatment. Their article [45] describes indications, goals, interventions and effects of drama-, music-, art- and dance therapy with a focus on a particular problem called *destructive aggression*.

Combining naturalistic/constructivistic research methodology and grounded theory methodology, Smeijsters and colleagues further [46] generated a practice-based approach to explore art therapies for young offenders. Their research shows that art therapists, including music therapists, focus on the treatment of core problems (e.g. self-image, emotions, interaction, and cognitions) that are linked to the *Diagnostic and Statistical Manual of Mental Disorders* (DSM [47]) and to the individual risk factors of offending such as impulsiveness and anger. At the same time, therapists work on enabling the clients to increase their self-confidence and self-experience. Working on “experimental play space” and focusing on the art process, rather than the delinquent behavior, the therapists reach deep personal levels that lie “at the basis of disturbances, dynamic risk factors and delinquent behavior”. This research resulted in consensus-based treatment manuals for drama, music, art and dance therapy and a treatment theory that helps to explain why art therapies in this particular setting work [46].

Codding’s “Comprehensive Survey of Music Therapists Practicing in Correctional Psychiatry” [1] provides a general map and data on “Demographics, Conditions of Employment, Service Provision, Assessment, Therapeutic Objectives, and Related Values” of 32 music therapists working in corrections or forensic settings in the United States. Relating to techniques and objectives, the results show that a majority (56%) of therapists apply behavioral techniques and work on different objectives such as promoting a positive “focus for leisure time and release of energy,” increasing self-esteem, promoting acts of self-control, encouraging “appropriate release of stress”, tension and anxiety, and try to improve their clients coping skills [1].

A review on choirs in the forensic setting is provided by Cohen [48]. The perspectives and reflections of nine conductors’ on the history, current practices and programs of their choirs is illustrated. Two theories on the impact of choral singing are discussed within this work [23,24]. Notable, the conductors mentioned that prisoners lack experience in the cognitive, physical and psychological domain but that singing in the choir increased prisoners’ abilities to trust each other, improved their vocal skills, increased their ability to pay attention to details, caused them to become more appreciative of others and broadened their awareness and cultural understanding. Important aspects were the words sung, the

group responsibility, the goal-directed behavior and the personal identity. Data from this study indicated that participating in a choir could be an opportunity for transformational change and may lead to growing in positive personal and social behavior for prisoners [48].

In 2012, a systematic review focusing on music making for health, well-being and behavior change in youth justice settings [49] was published. This summary of 11 quantitative and qualitative articles revealed that music making may be regarded as a tool for health promotion and may help to prevent young people from offending. The article also mentions that working with young people is a complex challenge. The impact of music making may depend on the extent of “ownership” felt by the participants, which may be affected by e.g. personal preferences or aversions regarding the music but also by the approaches and skills of those who lead the programs. The included studies reported several positive effects of music making on mood, anger, coping with different feelings. Thus successful interventions may function as a safe place for young people to express emotions, hopes or fears. However, the review points out that many studies were limited by methodological weakness and that qualitative studies were inconclusive [49].

In 2013, Hakvoort and Bogaerts presented a highly elaborate model of cognitive behavioral music therapy for forensic psychiatry patients providing an “explicit theoretical foundation for the effectiveness of music therapy in the treatment of forensic offenders” [50]. Music therapy is found to fit “into the *Risk-Need-Responsivity Model* of Bonta and Andrews [51] and *Good Lives Model* of Ward and Stewart [52] for treatment purposes in forensic psychiatry”. Based on more recent literature displaying cognitive-behavioral therapy for forensic psychiatry patients as the most effective approach, the authors draft a step-by-step cognitive behavioral music therapy model. Moreover, the article examines the role of the therapist in the treatment of forensic psychiatric patients and explains neurological foundations for the effects of music in terms of the reward system, emotions, cognitions, attunement skills and relaxation [50].

1.2. Topic and aim of this review

Around 1990, correctional psychiatry is described as a recently entered field for music therapists [53-55]. However, to this day, besides articles describing music making as one part of overall creative treatment programs, there has been extensive development on the topic from newspaper articles and scattered publications to special issues of scientific journals [32-34], a review on music making in youth justice settings [49], a book exclusively about music therapy in the forensic setting [56] and the first “explicit theoretical foundation for the effectiveness of music therapy in the treatment of forensic offenders” [50]. The growing number of articles, theses and dissertations exploring case studies, methodologies and challenges focusing exclusively on music therapy and music therapists within both the prison and

forensic psychiatric hospital settings reflect the ever-increasing interest in this field. Music therapists can either use receptive or active music therapy which provides manifold methods, e.g., music listening, lyric analysis, singing, songwriting, drumming, vocal and instrumental improvisations [45]. Additionally, introducing the clients to music and basic music theory in educational rather than therapeutic settings are considered beneficial [57].

In this review, the effort was made to gather information exclusively on music-based interventions involving active music making with adults in forensic settings. Aiming to present current practical approaches to music making in prisons and forensic psychiatry, the interventions, their impact and outcome will be described. To our knowledge, no publication has yet systematically reviewed music making interventions with adult offenders. This review intends to add to that body of knowledge, allocating the results for practitioners in this field of work and revealing additional issues for future research.

2. Methods

A systematic search of 13 electronic databases (see appendix), according to the “Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA [58]) was undertaken between 14th March 2013 and 9th April 2013, using pre-defined search terms. Derived from the search terms used in the systematic review in youth justice settings [49], relevant keywords relating to the adult forensic population were used in combination with words relating to music making (see *Appendix*). The same search terms were applied for each database. As to the date of publication, no period was fixed. Details were recorded regarding the number of studies found, number of studies meeting the specified inclusion criteria, number of studies excluded and reasons for exclusion. In addition, reference lists of included studies were hand screened for further studies.

All titles and abstracts (if available) were screened for relevance for the topic of the review. Studies not relating to the topic of the review were excluded. The abstract of the studies potentially eligible for inclusion were screened according to the pre-defined inclusion/exclusion criteria. In case the title or abstract provided insufficient information, the full text was retrieved. Studies were included if they sufficiently described interventions (a) involving active music making, (b) with adults, (c) in a correctional institution, if they were (d) written in English language and (e) published in a scientific journal. Studies were excluded if they reported on interventions with (f) adolescents, (g) were conducted in a non-justice setting, if they (h) did not involve music making, (i) addressed non-offenders or, (j) were not written in the English language. All studies meeting the inclusion criteria were retrieved in full-text. Authors were contacted where indicated.

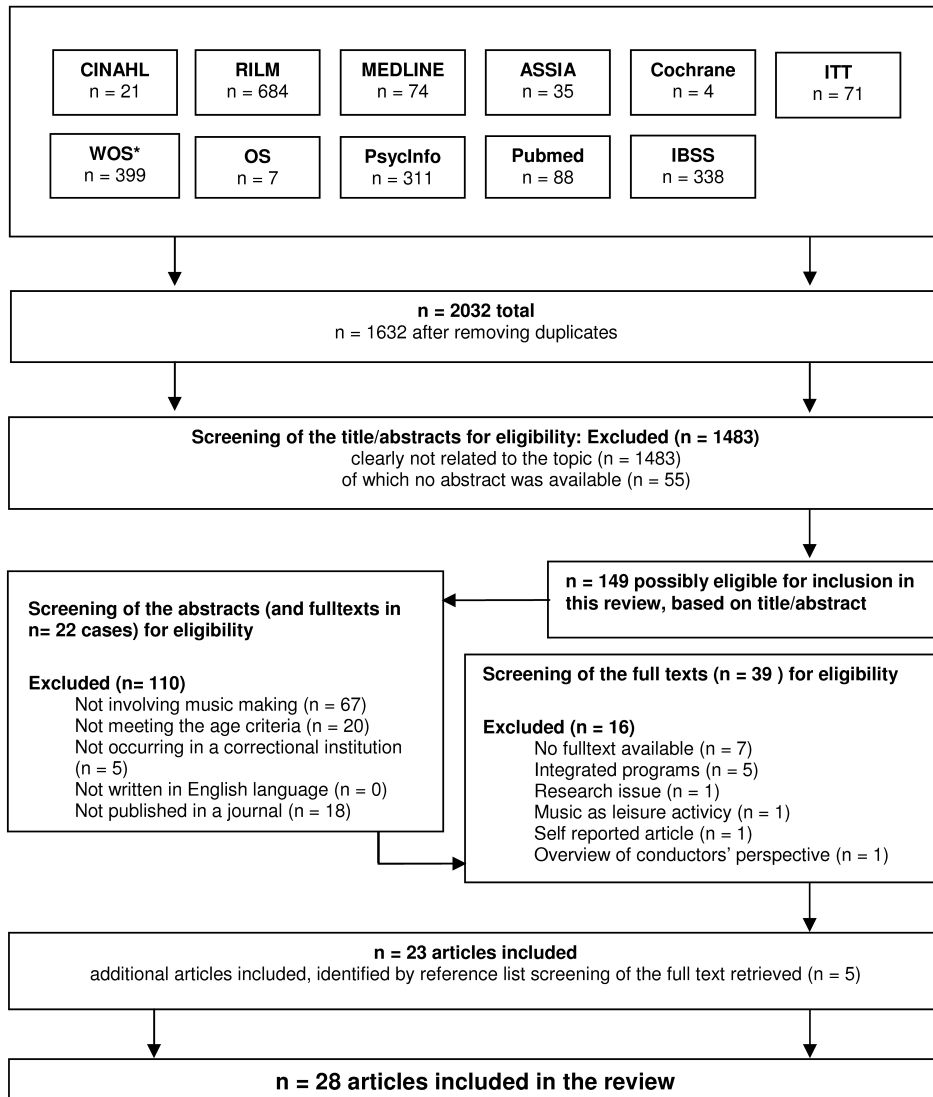


Figure 1: Search strategy flow chart; OS: Open Grey Database
 *Arts and Humanities Citation Index and Social Sciences Citation Index

Data was extracted on the types of interventions applied, subjects participating in the respective program, intervention, or study, the duration and frequency of the intervention, the aims and scope of the intervention, and the outcomes (if assessed).

3. Results

The search revealed a total of 2,032 hits including 400 duplicates. After removing duplicates, the title (or in cases where the title provided insufficient information, the abstract) of 1,632 articles was screened for relevance as illustrated in Figure 1. Regarding articles not relating to the topic, 1,483 were excluded based on title/abstract screening. This left a total of 149 potentially eligible articles that were screened according to the inclusion/exclusion criteria, leaving a total of 39 potentially eligible studies.

Finally 23 articles were included in the systematic review. Screening of bibliography lists of included articles revealed five further studies. The second part of this review will provide comprehensive table that summarize the included studies.

3.1. Music therapy group interventions

The search identified 8 articles that described group interventions within a forensic setting with offenders. Of these, five articles aimed to present the overall concepts of music therapy carried out in a particular facility [59-63]. Two articles addressed the process of a certain group therapy in depth [54,64] and one article examined the influence of different music therapeutic treatment modalities on relaxation, affects and thoughts of the participating clients [65].

Spang [59] describes her work in a forensic psychiatry during a two-year period. The weekly sessions with a duration of 50 minutes took place in a group attended by 9 to 12 clients,

In order to establish a relationship with the group, the therapist utilized musical presentations (i.e., patients could either bring their own music or use music from the therapist to share and discuss with the group). This later led to active music making and improvisations with percussion instruments, piano, guitars, and the voice. The topical frame was set to explore different emotions and find ways to portray them on various instruments. These improvisations were recorded to make a later listening possible. The author describes how she dealt with hostile, non-communicative clients and emphasizes the importance of acceptance, and affirmation for these clients. After the suicide of one member of the group, the sessions became very silent, only punctuated by discussions, yet the clients used music to express their sadness, anger, despair and shock. During the two-year period, the author reports that music therapy became a safe and contained environment and helped the clients to reveal hopes and fears. It fostered discussions about mental states, became a form of relaxation to reduce anxiety, promoted musical communication and resulted in increased self-esteem. The therapist and staff noted that many physical complaints ceased, and staff members observed a more constructive use of leisure time, i.e., patients gathered outside the therapeutic setting to make music [59].

Fulford [60] provides an “*Overview of a Music Therapy Program at a Maximum Security Unit of a State Psychiatric Facility*”. Music therapy in this institution consists of five one-hour groups, is provided five days per week for 1 to 3 hours per day and serves 50 patients daily. In the group setting, music therapy aims to improve communication skills, on-task behaviors, self-esteem, anger management, and social group skills. Individual sessions are only provided when a patient is unable to participate in group sessions. The therapist uses many different methods, including: (1) Structured melodic, harmonic, rhythmic and vocal improvisations (i.e., experimenting with the words of popular songs while the therapist plays the chord progression, or playing pentatonic, major, blues scales on instruments); (2) Songwriting depending on the patient’s functioning level (i.e. writing lyrics, selecting style, tempo, instrumentation, using digital effects, creating artwork to accompany the music); (3) Anger management and relaxation skills (i.e. music with or without imagery, progressive relaxation, drumming, singing and breathing exercises, discussions on alternate methods of expression of anger and release of tense). The author mentions that improvisation can be a very successful tool but only as long as there is enough structure that can be diversified as needed. Other interventions described include group ensemble performance, group singing and musical games. Among the instruments used are drums, percussion instruments, guitar, Autoharp, xylophone, piano, keyboard, tone chimes and handclaps or other body movement sounds. Patients are given the opportunity to perform before other patients and staff, and sometimes the staff performs together with the patients. The author also points out some challenges of working with these clients and describes the various

security measures (e.g. locking away guitar strings, picks, and drumsticks as well as continuous monitoring of the use of mallets and small percussion instruments) necessary. In addition, the security staff is provided live monitoring of the entire room by camera. Both group and individual sessions led to increases in communication, attention span, more constructive anger management behaviors, improved relaxation skills, enhanced emotional expression, improved socialization, better self-esteem, greater vocal projection, and increased enjoyment of music making itself [60].

Gallagher and Steele [61] describe a model for “Music Therapy for Offenders in a Substance Abuse/Mental Illness Treatment Program”. The sessions are embedded in an abstinence-based treatment program with the 12-step principles of Alcoholics Anonymous. Moreover, the music therapists adopt cognitive behavioral theories and theme-based work in this setting. The sessions take place once a week for 45 minutes over an average duration of 9 months with group size ranging from 5-20 (mean group size of nine). In the beginning and every three months group members are assessed by a questionnaire. The sessions begin with the patients identifying their feeling state and exploring possible influences. The therapists encourage the patients to participate in physical and verbal activities (i.e., playing instruments, applying relaxation techniques, discussing lyrics, processing feelings etc.). At the end of the sessions, the patients reflect their experience during the therapy. Different interventions, goals and topics for the therapy session are suggested. These include: (1) Instrument playing (e.g. improvising, group performance of familiar tunes, drum circles); (2) Lyric analysis (e.g. analyzing, listening, associating the meanings of the songs with personal feelings, memories, mental states); (3) music-assisted relaxation (e.g. breathing techniques, Progressive Muscle Relaxation [66], Relaxation Response [67]); (4) musical games (e.g. Jeopardy, “Name that Tune”, music trivia); and (5) songwriting (e.g. topic, style, lyrics). Further ideas for an intervention combine drama aspects with music therapy to produce a music video. Instruments used include keyboard, omnichord, drums, guitars, choir chimes, and percussion instruments. Moreover, Gallagher and Steele mention the documentation and evaluation system used in music therapy. They state, that music therapy was of great interest to the participants and could effectively reach clients who were unattainable for other therapies. Many clients reported that music therapy was one of their favorite groups and helped them to learn new skills, maintain sobriety, improve mental health, and foster the expression of feelings [61].

Watson [62] examines music therapy in terms of “Drumming and Improvisation with Adult Male Sexual Offenders” in a “Community Protection Treatment Center” (ACPTC). This music therapy model is based on the work of Loth [68] and Reuer et al. [69]. Group sessions are held one hour weekly for the general duration of one year. The group started with five members and increased to 15. Drumming and improvisation are used to provide opportunities for

nonverbal self-expression, positive group/social experience, to explore leadership opportunities, cooperation, confrontation and a safe environment to release intense emotions. The model is built upon three levels (beginning, intermediate, and advanced) with each level implying the same structure (warm-up/focusing activity, free improvisation, a closing task). At beginner's level, patients work on simple turn-taking tasks, play short solos and explore the instruments. Warm-up/focus activity includes echo tasks, simple rhythmic layering, playing solos and ABAB-forms using two timbres or techniques. The intermediate level includes part layering, holding ostinatos and other tasks, which require increased cooperation. Intermediate level warm-up/focus activities include cooperative rhythmic passing activities, following dynamics, complex rhythmic layering and resident-led improvisation. The advanced level focuses on "free flowing facilitation and advanced leading techniques found in community drum circles", [70] requiring listening skills, the ability to focus on nonverbal gestures directing the music, as well as tasks such as creating a composition. Residents reported that they noticed a release of tension, anxiety and anger and reduced headaches, less muscle tension and enjoyed having fun. Encouraging the residents to reflect on how the music group related to their individual treatment, the most common areas reported (and observed by the music therapist) were self-expression and the awareness of emotions, appropriate social interaction, cooperation and coping skills. In particular the drumming/improvisation group was considered to address several needs related to sexual offending (i.e., social interaction, building intimacy skills, listening to others, relaxation and coping skills, increased tolerance of others, better regulation of emotions, and increased impulse control) [62].

Reed [63] describes a music therapy group treatment as it took place in a hospital for mentally ill offenders. A gospel choir group, a music improvisation group, a rhythm improvisation group, and a music listening group are discussed (also see "choir interventions"). For the improvisation group and the rhythm improvisation group, clear objectives were devised including developing a new leisure skill, increasing a sense of self awareness, enhancing social and musical skills, increasing attention span, and improving perceptual-motor skills. The music improvisation group was originally designed for patients whose musical skills were already well developed, but later, patients with average skills participated as well. The sessions opened with a semi-improvisation period using chord progressions that were practiced during the preceding session. The patients demonstrated what they had learned from the previous week. The repetition helped to show where to continue in the present session. The group also used written music selections when they prepared a performance for special events at the hospital. The instruments used were piano, keyboard, drums, congas, saxophone, harmonica, and trumpet. The musical focus was on rock, Mexican-Spanish-Latino, soul, gospel and folk music. The patients learned to accept criticism as well as

praise from others in the group. They became skilled at recognizing and admitting mistakes, learned to accept new challenges and to gain knowledge from others. But the author also describes how certain problems, such as personality disorders, affected the group process, e.g., when one patient wished to solo all the time or tried to dominate the group. The rhythm improvisation group was originally designed for low-functioning patients with poor social interaction skills, disturbed affect or other symptoms that impeded a patient's ability to communicate effectively. The group met once a week for one hour and the session usually began with improvisation on percussion instruments. The patients habitually chose the same instruments each time, while the therapist used the keyboard for improvisation. African-American influenced rhythmic patterns and the 12-bar blues progression was predominantly used. The basic chord patterns were the I-IV-V chords and the primary keys used were E, A-flat, C and D major due to easy adaptability for improvising. A steady pulse was present, sustained by the bass line and additionally syncopated rhythms were played. Usually, the patients played fast tempos. The group also sang songs like "Hound Dog", "Blowing In the Wind", and "I Can See Clearly Now", accompanied by piano and drums. The author mentions visible improvements in the cognitive, psychological, behavioral and social functioning of the patients [63].

Daveson and Edwards [64] present a descriptive study on group music therapy with five female offenders who completed a 12-session music therapy program in a female correctional facility over a period of 14 weeks. Interventions mentioned are song writing and song parody, singing, instrumental recreation, and listening to music. During the sessions, many conversations emerged focusing on the "here and now" (i.e. relationships with staff members, racial tension issues, as well as personal issues such as physical, emotional, sexual and substance abuse, criminal sentencing, coping mechanisms, aggressive behavior and alternative strategies of conflict resolution). The participants addressed some of these topics in songs they wrote and expressed their feelings about these issues musically. One song written by a client was titled, "Channeling My Aggression", and another song written by the group dealt with feelings of restriction, frustration and coping mechanisms as a result of being incarcerated. The participants identified that singing, song writing, song parody and music listening increased self-expression and helped to reduce stress, anger and frustration [64].

Loth's article [54] presents a group case study of an eight-week music therapy group in a Medium Security Unit in a general psychiatric hospital. The interventions involved group improvisations and discussion. The available instruments were tuned and untuned percussion instruments and a guitar. During week one, the therapist described how each group member kept changing the instruments and gathering them around him-/herself, and how they managed to share instruments by the end of the session. The next week, the author reports that cohesiveness had begun to emerge and the group members increased in confidence discussed their

feelings and displayed expressive elements in their playing after a long improvisation. During week three's session, the patients showed intensive cohesiveness, became supportive of each other and the improvisations became more flexible. Beginning with week four and continuing onward, the cohesion began to break down which was triggered by a replacement of the co-therapist. One patient refused to attend the session as he did not like the new co-therapist. The group became smaller, absence became frequent and the patients became distracted, worried about court cases, or movements to other units and could not focus on the music as they had in the beginning. Two clients only attended the last session. The author considers the sessions in the light of choice, denial and the law. She mentions that the opportunity to make choices is often limited for the patients, so some could not cope with having a choice and often answered, "I don't mind" or they said, "No", because they could not pass up the chance to do so. For some of the patients, their enthusiasm for the music worked against their opposition to decision-making and talking. Music therapy can function as a safe and contained place, where a client can get in touch with his feelings within the music, even if he shows a strong sense of denial (e.g., denial of the offence committed). Another aspect that the author mentions is the impact of the criminal justice system on the therapeutic relationship and is the basis for the individual goals the clients pursue in therapies as well as in general. (For some patients, getting better may be viewed as disadvantageous as they could be returned to prison or be sentenced.) Overall, music therapy functioned as a safe place where choice was given and where safety existed to explore and decrease the denial of "negative" behavior. It also allowed the participants to become aware of their feelings and release tension [54].

In his 1989 study, Thaut [65] examined the influence of music therapy interventions in a "correctional psychiatric hospital inside a closed custody state prison facility". During a period of three months, eight different groups of patients participated in three different treatment modalities on different days of the week: (1) music group therapy, (2) instrumental group improvisation, and (3) music and relaxation. The scales used to measure the changes were derived from a survey of 130 prisoners concerning the perceived therapeutic benefit. The music group therapy was based on the technique of personal agenda-setting by each patient in combination with guided music listening. In the instrumental improvisation group, the patients played percussion, keyboard, and guitars. Solo/chorus forms were used to permit communication between the patients, to give them opportunities to express different emotions on musical instruments in the solo parts, and to work together in the chorus focusing on a rhythmic pattern. The music relaxation group used the technique of progressive muscle relaxation [66] in combination with listening to sedative music. In all three music therapy treatment modalities, the patients reported significant improvement after music therapy in terms of relaxation, mood, emotion, and thoughts about

themselves. Music therapy proved to be an efficient instrument for producing self-perceived changes in relaxation, feeling and thinking states [65].

3.2. Educational group music making

Many articles identified by the search deal with music making in prisons but with greater emphasis on music making in terms of education or leisure time activity than therapy. The articles seek to describe how music teachers, educators or musicians get involved in musical programs in the prison settings. Most of the articles are written from a personal point of view with authors reflecting on their own work and ideas. An exception is the study by Anderson and Overy's [71] that explores the impact of engagement in music and art programs and examines the relation between participating in creative art programs and general educational commitment.

Warfield [72] describes a unique educational music program embedded in other educational programs for prisoners in a female correctional center: a string orchestra. Founded in 2003 by a volunteer, the membership increased from 8 to 22 female prisoners. *Arts on the Edge* is a non-profit organization which was founded especially for the orchestra and promotes the program, but 90 percent of the program is funded from ticket sales for concerts and also prisoner-made works of art that are sold at the performances. In the beginning, the program consisted of a beginner's, an intermediate and an advanced orchestra. Now there is an advanced orchestra with ten participants and a beginner's orchestra with eleven participants. The women may choose to play the violin, viola, cello or bass. Many of the instruments are received from public donations and pawnshops. The orchestras meet separately once a week to rehearse for two hours. In addition, the inmates practice their instruments during the week in a practice room and in their own rooms. The rehearsals consist of warm-ups, playing scales, bow strokes, practice tone, intonation and any upcoming concert programs. Participants can also attend optional chamber music classes or obtain private lessons. An inmate earns a certificate for successfully completing a semester. Twice a year, the orchestra performs in the facility (one concert is held for the prison staff and one for the public). The orchestras also perform on other special occasions such as birthday parties or holidays. After the public concert the audience, which consists of many family members of the inmates, is allowed to interact with the inmates. The orchestra members are allowed to wear black outfits for the performances. According to the article, the overall experience of playing in this orchestra teaches the inmates commitment, confidence and teamwork, helps them to develop a sense of competence and worthiness, and increases their musical awareness and love of music. It also may help them to learn skills they can use for re-entering into society [72].

Rodrigues and colleagues [73] report on an (artistic and educational) music program "BebêBabá" for babies and their parents which was conducted in a prison with incarcerated

mothers and their babies. “BebêBabá” was created by “Companhia de Música Teatral”, a Portuguese music group in 2001, in order to use music to foster attachment between parents and babies, social relationships in the community, and musical and artistic life. Five workshops were arranged for mothers with babies in the prison, and five other workshops were held for mothers only with a duration of five weeks. The program took place in Portugal, where mothers in prisons are allowed to have their children with them until the age of three years or, with exception, four years. The activities were videotaped and resulted in a performance where excerpts were shown to present a part of the process instead of displaying only the final musical product. The article does not provide very detailed interventions. Instead it focuses on the results and impact of the program and the overall background of music in prisons. Furthermore, it mentions singing, dancing and music games. One example from the program is that the mothers were asked to compose a song using their private nicknames for their babies. In the opening of the final performance, they performed the song in which each baby was presented by his or her mother as soloist. Interventions like these helped mothers to express their “motherhood identity” and gave them a personal role instead of just feeling like a mere number in the prison population. Mothers confirmed that they sang more often for and with their babies, and it was observed that facial expressions and behavior of the babies changed from the beginning of the program. A “chain effect” was observed: babies were stimulated by music that induced the mothers to interact with them. It is interesting to note that originally the program was aimed at artistic and educational goals, but the researchers found therapeutic goals as well because engagement in the program also led to creation and improvement of bonding between parents and babies. Within the prison setting, it also helped the women to regain competencies as mothers, which is pivotal for appropriate development and mental health of the babies [73].

Fierro [74] describes a music class and its impact on the participants at Santa Ana Jail in California. The class is held twice a week with 22-24 students and continues for an average length of 18-24 months. In the program, the students learn many different songs and styles, (i.e. rock tunes, rancheras, Motown, songs in English and Spanish, songs by various artists such as Guns N’ Roses, Tina Turner, The Rolling Stones, Staind, etc.). Classes address the basics of music theory, instructions in guitar, keyboards, percussion, vocal skills, correct breathing and performance techniques with emphasis on emotional expression while performing are considered the essential keys. The class runs like a three-ring circus (theory students, guitar players and keyboard players) with several activities happening at the same time. But the theory class serves as a basis from which students can move on to the instrument classes. There are also collective sessions, which are spent together. The author underlines the importance of keeping it simple so everyone can participate. The recording of a CD, the meaning of the musical performances at the graduation ceremonies whenever a group

of students completes a course or passes an exam, and the importance of a strong team and committed leadership are emphasized. Moreover, some inmates report that the program helped them to interact across racial lines and mingle with participants from different groups, which rarely happens in the general jail population [74].

In her article, Tiernan [75] reflects on her experience working as a tutor and community musician in a probation center with young offenders aged 17-25 years. She reports about a successful music program involving composing songs and soundscapes, performing in the public, recording original material, attending local and national performances and interviewing musicians. The author also focused on creative composition, song writing and music technology. After working in other institutions elsewhere, she returned to this probation center to find a curriculum, which did not allow a creative, flexible approach. Instead, it required specific learning outcomes such as using the terminology of music, preparing music for a concert visit, recognizing instrumental sounds, musical patterns, outlining areas of preparation and processes in terms of a live concert or the production of live music, learning about musical styles and discussing elements of composition used in selected pieces of music. The author describes how an animation project where students wrote songs based on fables written by another educational class encouraged students and teachers to get involved and create a “community of active learning”, which was hardly possible with the strict curriculum [75].

Anderson and Overy [71] examined music and art classes in terms of engagement in education of young offenders (mean age 18 years) and they explored whether such commitment affected further participation in education, self-esteem, self-control, behavior and literacy skills in a controlled study without randomization. The study involved eight weekly sessions with a music group (n=4), an art group (n=5) and a control group (n=5), which took other educational classes. The main aim of the music group was to encourage the participants to work with music in a group context. Using a special reading method developed by Milner, a music teacher who joined the program, the participants were able to play the guitar almost immediately. The method involves playing in open tuning and using stickers placed on the neck of the guitar that helps to identify the names or numbers of the chords. Each participant was given song sheets containing the chords but without traditional notation and the lyrics. The men selected and practiced songs such as “When I Come Around”, “500 Miles”, “Cigarettes and Alcohol” and “Wonderwall”. Three songs were recorded for an album, a copy of which was provided to each participant. The outcome indicated increasing educational commitment for all three groups with the largest growth in the music group. Compared to the control group, young offenders in the art and the music groups continued most consistently and for the greatest duration with courses, which supports previous ideas that patients who participate in arts programs in prisons are more likely to be engaged in other educational areas [76]. In

addition, the impact of working towards clear and achievable goals in arts projects and in other educational programs helps the participants to recognize their personal progress. Interviews revealed that prisoners enjoyed the sessions and considered them to be attractive and meaningful. The psychometric measures provided mixed results, which were difficult to interpret. Problems may result e.g. from the small sample size or the question as to whether measures developed outside a prison are appropriate within a prison. For the general success of such creative programs, the importance of working together in a team with officers, researchers, the teaching staff and the prison service is stressed [71].

3.3. Choirs

Nine articles exploring singing in a choir in prison settings were included in this review. Five of these interventions took place in the USA [23,63,77-79], one in New Zealand [80], and one in Israel [30]. In two cases, no direct information was found on the institutions or the location, but the nationality of the authors was American, and the articles indicated that the interventions were conducted in the USA [57,81]. Four of the nine included articles were written by Mary L. Cohen a prominent representative of choir interventions in the forensic setting.

The article by Abrahams et al. [57] describes a choir music program which aims at building community and helping the inmates to “move beyond barriers” and “transform lives through music”. The two conductors, both junior education majors, rehearsed with the choir for 75 minutes per week, following a rehearsal plan and working on behavioral objectives (e.g., learners will be able to: keep a steady beat, sustain the own individual part when singing in a canon, differentiate eight notes and quartet notes), cognitive objectives (e.g., learners will understand and be able to explain the concept of pulse), experimental objectives (e.g., learners will encounter working with partners, singing in canon, creating an original rap), and critical objectives (e.g., learners will perceive differently that each participant has a “voice”, can make musical decision, can perform as a musician). At the beginning, a short discussion and a welcome song takes place to prepare the male inmates for the music and to help building a relationship between the conductors and the inmates. The “name game”, where they clap, stomp and spell a certain rhythm involving their names is used. This game proved to be useful to help the inmates experience and understand basic rhythm aspects by encouraging them to clap different note values at the same time while being divided into several groups. Besides singing being the main activity, the inmates are taught in basic music theory, pitch matching, reading notation, using solfège syllables and hand signs. Also space to improvise, to rap or to personalize a well-known song replacing the existing text with own, inventive verses is provided. The authors choose songs, which nurture social justice themes and point out the importance of creating an environment of mutual respect. The rehearsals end with all

inmates standing in a circle with their eyes closed and intoning their own musical sounds while listening to the sounds around them. The authors experienced their work as demanding. Security rules affected even the visitors’ clothing and made it impossible to bring, for example, speakers or pencils to the rehearsals. It was up to the guard on duty whether the rehearsal room had a piano or not. Inmates reported that through singing they could calm down easier and release stress and that it brought joy and helped them to express themselves. The chorus was perceived as being empowering and made them feel pride for what they achieved [57].

In her article, Roma [77] first describes how the Wilmington College in Ohio, among many other colleges and universities across the country, “began an associate degree program within the confines of prison walls in two correctional institutions and one Pre-Release Center”. Wilmington College hired Roma as a full-time Professor of Music in the Correctional Education program. She conducted a choir, the men’s prison choral community. The choir rehearses once a week with 15 to 25 incarcerated men and the conductor, practicing different musical styles such as gospel songs, anti-Apartheid songs and traditional spirituals. The choir was asked to perform at events like the graduation ceremony and at guest artists’ concerts. The special project of making a CD emerged when the inmates were requested to complete service hours. The inmates came up with the idea to record a CD as a part of their service and to choose beneficiaries to profit from the proceeds of the sale. The inmates chose eight organizations to which money would be given after paying back the amount of money that the college had borrowed to record and produce 1000 CDs. After that a second CD was produced including even more well-composed songs by several men in the choir. Again, social service agencies were selected that were to receive the profits of the CD sale. The author emphasizes how important artwork in this setting is and that “a few hours a week is enough to begin making huge changes for incarcerated communities starving for cultural exchange and artistic opportunities” [77]. Due to severe cuts to the college program and state budgets, many programs had unfortunately been suspended. The inmates reported that the external connections helped them meld with society outside prison. They felt that singing in the choir had an enormous personal value and enabled spiritual and emotional development, supported artistic expression, and helped build a sort of kinship and cooperation [77]. [In 2012 the choir participated in the seventh biennial World Choir Games. They entered in the Gospel and Spiritual category and they performed in the correctional institution in front of the jury. They were awarded with two golden diplomas (one in the level six and one in the level four [82].]

Silber’s qualitative study [30] in an Israeli prison sought to explore singing in a women-only prison choir and the therapeutic needs of the inmates participating. During an eight-month period, the choir met once a week for 90-minute rehearsals. The sessions were conducted in Hebrew with the

primary goals of learning new songs and developing choral skills. The author was provided with a guitar when needed, a keyboard and selected musical pieces, which she believed would carry a beneficial message for the inmates. The choir had three performance dates to work towards. The songs were a mixture of Eastern and Western musical styles and were arranged harmonically by the author. A three-word bouncing song was used as an “anchoring piece” in the beginning and at the end of the rehearsals. Using that song, the participants also experienced singing in a call-and-response format that helped them to develop group cohesion and trust [83]. Another intervention to work towards these goals was singing a solo with accompaniment and support from the powerful rest of the choir. Problems the author faced included unsteady attendance and other structural obstacles. The author described how participants learned to follow hand gestures in a musical sense but also beyond the music, the conductor used gestures to point out appropriate vs. inappropriate behavior. The inmates were taught how to use dynamics, their head voice and breathing skills. These musical concepts proved to be efficient to help the conductor to minimize frictions and aggressive outbursts. Besides improving vocal skills and increasing self-control over their voice, one of the results is that participation in extracurricular groups such as singing in a choir can help inmates to form an “alternative community” and to create positive bonds in a normative setting. The choir became a protected space for the inmates where they could learn to listen to others, express themselves, release tension, accept criticism and learn social skills. The inmates’ self-esteem increased, they learned to work towards a long-term performance goal and were complimented by other staff members [30].

Menning [80] describes the Singing with Conviction Pilot Project (SWCPP) facilitated by *Arts Access Aotearoa* (a charitable trust) in the New Zealand prison system and explores the ethnic dimension of the SWCPP related to New Zealand’s Maori population. The project involved 339 prisoners from 5 different prisons and four professional singing tutors. It was derived from a similar project in South Africa with adaptations made for New Zealand’s cultural context. The African project was designed on a competitive basis with prison choirs travelling around the country and “staying in the prisons that host the choir competition”. In New Zealand the singing was recorded and judged by the recordings. CDs were recorded and some choirs participated in a final concert. Problems occurred regarding inadequate funding, facilities and participation aspects. Evaluators found that the project helped to improve relationships between staff members and prisoners and that participating in the SWCPP increased the morale of the inmates [80].

Cohen [23] explores singing in a mixed choir of community volunteers and prisoners from a minimum-security state prison. The volunteers hold a monthly rehearsal in a church while the prisoners rehearse twice a week in a prison chapel. Some volunteers join the rehearsals in the prison. Twice a year they perform together in a public concert,

during which many inmates recite narrations. After the concert, the audience may greet each inmate personally. In the rehearsals, they work to “match pitch, follow the score, understand various musical concepts, and function as a group” [23]. The first, quantitative part of the study examined demographic characteristics, the musical background of the participants, self-reported attitudes, preferences and beliefs of the participants, self-reported memories of particular choir experiences, motivations for joining the choir and the question as to whether there were significant differences between volunteers and inmates. Inmates reported that their most positive opportunities derived from the choir were gaining social bonds, peak experience and self-pride. They also learned a musical skill, appreciated volunteers observing their success, and increased their ability to relax. Negative experiences, such as one’s own or a fellow member’s uncertain singing, challenges of incarceration, volunteers’ long drives and time commitment, some inmates’ low levels of motivation or practice absences were mentioned, but the majority indicated there were no negative experiences. The inmates reported that they experienced feelings of connection, self-pride, gratitude, stress relief, and personal growth. The second phase was a “qualitative grounded theory methodology” aiming to “enrich contextual understanding of data, gain new insight and generate a theory for subsequent research and reflection” [23]. Some subjective phenomena mentioned by the participants were social connection beyond racial barriers, joy, increased feelings of self-worth, but also frustration about limited singing skills and lack of motivation of other participants. As per participants, some outcomes included reaching a goal through a process, broadening perspectives, working cooperatively with others, gaining a sense of pride and accomplishment, learning a new leisure skill and experiencing an emotionally moving activity. The results of the study indicate that a volunteer-inmate mixed choir contributes to the personal development of the inmates and gives volunteers a chance to reflect on the justice system, widens their perspective of inmates and allows them to form relationships with the inmates. Singing in a choir can simply be seen as an interaction between individual singers, a musical score and a conductor. However, considered in a wider context, overall results show that choral music education experience embracing the complex relationships between social, cultural and musical aspects, may foster transformative personal and interpersonal change in a prison choir setting [23].

Another study by Cohen [81] conducted two experiments to compare the well-being measurements of a group of prison inmates singing in a prisoner-only choir, and those of a group of inmates singing in a combined volunteer/prisoner choir, with those of prison inmates not singing in a choir at all. In the first experiment, an inmate-only choir performed in the correctional facility. The rehearsals took place weekly with a duration of 90 minutes and followed the same schedule each time, i.e., physical and vocal warm-ups, solfege practice, pitch matching, choral blend practice, literature practice for

upcoming concerts and a closing song, “May the Gift of Human Kindness”. The choir performed “Keep Your Lamps” and “May the Gift of Human Kindness” at a therapeutic community graduation ceremony. The second experiment involved the same prisoner-only choir group and the same control group as in experiment one, another inmate singing group, and a male volunteer singing group, which performed altogether in a public inmate-volunteer choir except for the control group. Among the songs performed were compositions by Schubert, J.S. Bach Mendelssohn, Handel, as well as songs such as “O Sole Mio” and “This Little Light of Mine”. To introduce the music, some inmates recited narrations and, at the end, the choir led an audience sing-along. In both experiences, no significant differences between experimental and control group were indicated in composite well-being scores. However, “In the second [experiment], there were significant differences between experimental and control groups on four subscales: emotional stability, sociability, happiness, and joviality” [81]. The inmates reported “having the most wonderful time” and being overwhelmed by the “warmth of the people”. The author comes to the conclusion, that “the quantitative and nominal data from this investigation indicate that choral singing may enhance inmate singers’ psychological and social well-being” [81].

In another mixed methods study, Cohen [78] examined “changes in community singers’ attitudes toward prisoners” and explored “changes in prisoner singers’ perceptions of their social competence”. During a twelve-week period, the combined prisoners and community-members choir met weekly for 90-minute rehearsals, which included vocal warm-ups, pitch-matching practice and rehearsal of choral arrangements, which were accompanied by a volunteer pianist. The practices began and concluded with two “anchoring songs” which were sung *a capella*. Two concerts were held, one for prisoners and staff members and one for outside guests. The second performance was recorded and CDs were sent to prisoners’ family members. The group improved their musical, vocal and social skills. Social interaction among the prisoners increased and they also made new friends among the volunteers. Because the choir members were not allowed to discuss details of one another’s lives, e.g., the prisoners’ crimes or the volunteers’ personal life, one member stated that the relationship lacked authenticity. From the singers’ open-ended answers data, the following primary categories emerged: self-gratification and relationships with others. Singing in the choir, the prisoners noticed that they became more confident, enjoyed learning various songs from different cultures and performing in front of an audience. “Volunteers’ subcategories linked to self-gratification included enjoyment and gratitude for their own lives” [78]. Regarding the category of relationship with others, five subcategories emerged from prisoner singers’ data, i.e. “feeling respected, getting along with others better, making new friends, connecting to something outside the prison, and improving family relationships” [78]. Community members

stated that participation in the choir encouraged them to reflect on the criminal justice system [78]. Also results of quantitative data indicated that they changed the stereotypes they previously held about prisoners.

Another article by Cohen [79] reports about successfully including a writing component between the rehearsals of a choir consisting of community members and prison inmates in order to build camaraderie. The choir members had the option to choose one of the topics distributed by the therapist and to write down their thoughts and reflections about it. They could then exchange their comments with another random person by putting their writing into a basket labeled “Writings to Exchange” or they can put their writing into another basket meant solely for the therapist. “If they brought writings to exchange, they can pick up someone else’s writing, read and respond and return it to the therapist’s basket the following week” [79]. After the therapist responded to each piece, a volunteer took some excerpts and created newsletters that each member received after approval from the prison administration. Writers revealed reflective thinking about music and themselves, but lyrics or introductions for chorister-composed songs were also presented. In this context, writing functioned as a “communication channel” between the therapist/conductor and individual participants and also became a “medium for reflection on the music making process and one’s own approach to that process” [79].

Reed [63] describes four music therapy groups (gospel choir, improvisation, rhythm improvisation and music listening) created to help mentally ill offenders. The improvisation groups have been described above, here the gospel choir group will be specified. The group met once a week for 45 to 60 minutes. The goals set were to “practice expression of feeling, socially appropriate behavior, task mastery”, foster abilities to “express opinions, think independently, increase social and verbal interactions” [63]. The rehearsals began with a warm-up (a call-and-response song structured “on an up-beat tempo 12 bar blues pattern”) to ease initial tension and prepare the patients to follow the group leader, verbal cues and rhythm. After the warm-up, the group learned new gospel songs. In the process of learning, the leader demonstrated rhythms, melodies, pitches, harmony and the group repeated what the leader demonstrated. They proceeded line by line and repeated passages until the group learned the whole song. After the group learned the lyrics, they started to memorize the songs in order to be able to sing without sheets. They also integrated clapping while singing. In the end, the leader recapped what was worked on during the session and the group joined hands for reciting a closing prayer. The choir performed at the church service and in special events. The author mentions problems such as court dates, releases or unexpected transfers to other units. Through the performances, the patients gained self-esteem, took pride in their accomplishment and were complimented by peers and staff. Participating in the choir created an opportunity for patients to benefit holistically by singing, clapping, keeping

appropriate tonality, and to memorize rhythm, harmony, lyrics, pitches and melody. The choir enabled patients who often suffered from auditory or visual hallucinations to improve memory areas, tactile/sensory stimulation and reality-oriented behavior within the context of a fun activity. It gave them a chance to interact with others, improve their coping skills and get involved with topics of the songs, which often affected their own life [63].

4. Summary

This first part of the systematic review on music making interventions in the forensic setting, explored studies on therapeutic groups, educational groups, and choirs. The articles on group interventions show that music therapists working with offenders use different treatment modalities, such as structured treatment programs as well as more flexible approaches. According to the reports included, prisoners regard music therapy as a safe and contained place. Improvising, drumming, singing, musical games, musical relaxation techniques, learning how to play songs and songwriting are used in these group treatments to improve social skills, the attention span, relaxation skills, anger management, dealing with or expressing different emotions, to enhance coping skills, and self-esteem. Some articles revealed that music therapy might reach patients who are unattainable for other therapies even though the fact that music making itself is often considered a fun and enjoyable activity.

The reports and articles that incorporated educational music making groups illustrate how musical interventions can be beneficial in prison settings and show that even without a primary therapeutic goal, many positive results may emerge. Among these were the improvement of social skills, teamwork, and confidence, love of music, crossing racial lines, foster bonding, and increasing commitment. Such settings can impact commitment to education in a positive manner and help prisoners to express and experience various emotions. Some of the participants - for the first time ever - reported to feel pride in the accomplished musical product. The articles indicate that interventions aiming at music making with clear, achievable goals and educational aspects can result in “therapeutic” implications.

Choirs within the included studies consisted of only inmates and combined choirs in which community volunteers sing together with the prisoners. According to the authors and the participants, the combined choir is found beneficial for the volunteers and gives them an opportunity to reflect and adapt their opinions concerning prisoners and the justice settings. For the prisoners, it provides a chance to improve social and communication skills with people “outside” of the forensic facility. This can be one step towards (re-)integration into society. Problems mentioned within this studies address insufficient funding or structural obstacles. Articles report improvements through singing in a choir in vocal, social and communication skills, increased self-esteem, pride and

accomplishment, the development of emotional expression and kinship and a decrease in racial biases. Ideas such as recording a CD, or including a writing component are reported to be successful. As Reed [63] describes, participants of a choir can benefit holistically through singing in a group. A choir considered against the background of complex cultural, social and musical relationships may foster transformative personal change [48], form an “alternative community” [30] and help participants form positive bonds.

The second part of this review will be published in a subsequent issue of *Music and Medicine* focusing on case studies and established music based programs in the forensic setting.

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Biographical Statements

Biljana V. Coutinho, MA, is a research associate at the School of Therapeutic Sciences, SRH University Heidelberg. She is a professional piano teacher (B.Mus.) and received her Master’s degree in Music Therapy at the SRH University Heidelberg.

Anita L. Hansen, PhD, is an associate professor at the University of Bergen, Department of Psychosocial Science. Her research interests are experimental intervention studies with focus on psychophysiology and executive function.

Leif Waage is Deputy Regional Director for the Correctional Service Western Norway. He is trained as specialist in clinical psychology and in organizational psychology and connected to the Centre for Research and Education in Forensic Psychiatry, Haukeland University Hospital.

He is member of The Mental Health, Law, and Policy Institute at Simon Fraser University, Vancouver, Canada.

Thomas K. Hillecke, Dr. sc. hum., is Professor of Clinical Psychology and dean of the School of Therapeutic Sciences, SRH University Heidelberg, Germany.

Julian Koenig, Dr. sc. hum., is a post-doctoral researcher at the Department of Psychology, The Ohio State University.

Appendix A: Search strategy applied

Databases used: CINAHL, RILM, MEDLINE, ASSIA, IBSS, Sociological abstracts, Cochrane Library, Index to Theses, Social Sciences Citation Index, Arts and Humanities Citation Index, Open Grey, Psycinfo, Pubmed

Keywords: #1: music*; #2: sing; #3: singing; #4: singer; #5: sings; #6: song*; #7: guitar*; #8: choir; #9: choral; #10: rap; #11: rapping; #12: rapper; #13: hip-hop; #14: drumming; #15: offen*; #16: delinquent*; #17: crim*; #18: prisoner*; #19: inmate*; #20: forensic*; #21: #1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14; #22: #15 OR #16 OR #17 OR #18 OR #19 OR #20; #22: #21 AND #22