

# Music and health promotion in Danish/ Nordic hospitals – who and how? An essay.

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## Abstract

*The purpose of this article is to provide an overview of health promotion through music activities and interventions in Danish/Nordic hospitals over the last twenty years, with particular emphasis on paediatrics. The article also discusses theoretical rationales and practical challenges related to these relatively new initiatives. The methodology is a mixture of heuristics and literature review. The author has been an active agent in this field – as a clinician, researcher, supervisor and teacher – and has taken part in the development of the theoretical concept of “health musicking”, which serves as a framework for many of the professionals (‘agents’) in the field. Findings include a presentation of the present evidence base for music interventions in Nordic hospitals and a systematic overview of agents in the field. There is a growing body of evidence from different types of research studies in the Nordic countries. However, the evidence base tailored to this specific field is still limited. Two different approaches or roads to the implementation of music therapy/music medicine in hospitals are identified and discussed, and practical implications are highlighted in a number of recommendations for professionals in the field.*

**Keywords:** *health musicking, music therapy, music medicine, hospital, evidence*

## Introduction

In this essay I look back on a process that I have followed and actively participated in for more than two decades: the use of music activities and music experiences in the healthcare system – primarily in Denmark but also in other Nordic countries. As a researcher, I have worked with music therapy in cancer rehabilitation (Bonde, 2004; Bonde, 2015), with music therapy in palliative and hospice care (Bode & Bonde, 2011; Bonde, 2012), with music therapy for patients in psychiatric treatment (Bonde, 2010; Bonde & Pedersen, 2013 ) and with the development of music medicine for different populations, including elderly people with dementia

(Krøier, Anderson-Ingstrup & Bonde, 2019). I have guided Danish and international PhD students with projects in many different clinical areas, for example women with gynaecological cancer (Wärja & Bonde, 2014) and children with cancer and their families (Sanfi & Bonde, 2014; Sørensen & Bonde, 2015). I have followed the paediatric *Music and Imagery in Child Oncology* study (MICO is described in detail later) for more than ten years. As a teacher of music therapy at Aalborg University, I have helped train music therapists who are currently employed in psychiatry, elderly care, hospices, the rehabilitation of patients with acquired brain injury, in work with children and young people with physical and mental health issues, etc. (Bonde, 2014). Yet I have never seen a music therapist employed in the Danish hospital system. Conversely, in Norway I have guided an ever-growing group of music therapists working in paediatric hospitals, and I have followed a pioneering Swedish project on the effects of music therapy for cancer-affected children and adolescents who receive stem cell treatment (Uggla et al., 2019; Uggla, Mårtenson Blom, Bonde, Gustafsson & Wrangsjö, 2018). I have contributed to the development of the theoretical concept of “health musicking”, which I will briefly introduce to provide a broader background. In recent years I have researched the wider field of music and public health, research which partly focuses on the use of music as a health-promoting factor in everyday life and partly discusses musical prevention efforts for selected – clinical as well as non-clinical – groups (Bonde & Theorell, 2018).

## Method

The starting point for the present essay is a recently published report on the use of music in Danish hospitals (Jensen & Nielsen, 2019), which gives me an opportunity to reflect on the current situation in Denmark and the Nordic countries. The article focuses on a problem or dilemma that I have encountered many times over the years: despite good evidence in the form of meta-analysis such as Cochrane Reviews, music therapists – researchers as well as clinicians – are often met with scepticism by doctors, hospital administrators and politicians. I reject the simple explanation that the healthcare sector is currently under-financed and therefore that there is no room for new initiatives or professional groups. Instead I will try to point to other causes – and possible solutions. My method is a mixture of heuristics (I want to reflect on personal experiences over three decades), literature review (presentation of and comments on key literature in the field), which in the end leads to various suggestions and recommendations. First, I focus on the broad concept of *health musicking* and on research in music and public health. Then I zoom in on the specific topic of music in hospitals, especially paediatric hospitals, where my starting point is the new Danish study of this field.

## Theory: Health musicking

The idea that music can be part of individual and public health promotion goes all the way back to ancient Greece. The Asclepion sanctuary in the old city-state of Epidaurus can be understood as the first integrative health centre in the world where music, dance and theatre were included in treatment and prevention (Bonde, 2014). Norwegian music therapy pioneer Even Ruud was the first from a Nordic country to launch an academic publication on the broader subject: *Music and Health* (Ruud, 1986). In 2006 his countryman Trygve Aasgaard published the anthology *Music and Health* (Aasgaard, 2006), and Ruud further developed the ideas, partly as a researcher at the Centre for Music and Health (today the Centre for Research in Music and Health, CREMAH) from 2008, partly as initiator of the *Music, Culture and Health* network (MUCH, 2011-13) and partly in a series of articles and book chapters on various aspects of the health potential of music experiences and activities (Ruud, 1998, 2001; Ruud & Stensæth, 2012). Following a pre-conference in connection with the *4th European Public Health Conference* in Copenhagen 2011, a Nordic Network for Research in Music and Public Health was established which in 2018 co-authored the first scientific anthology on the subject, *Music and Public Health* (Bonde & Theorell, 2018).

Our knowledge of how and why music has a health potential for most people is gradually consolidating (and) based on contributions from both the humanities and the social and natural sciences. Scientific research into the effect of music on the body, mind and spirit includes 1) neuroscientific studies of the brain's response to and processing of musical stimuli in musicians as well as non-musicians, 2) analysis of the "mechanisms" that are activated: when we sing, play or listen to music a number of neurochemical systems are set in motion, regulating a) the brain reward system, motivation and emotions, b) stress responses, c) immunity, and d) social attachment. These are effects that can be measured objectively, and results can be calculated using statistical methods. If humanists or social scientists ask informants (of many different types) what they are experiencing when listening to music, we get subjective accounts of how music is used to regulate mood, bodily states (alleviate stress or boost energy) and socialising. Finally there are the aesthetic and existential experiences which music can provide in rich measure (Gabrielsson, 2011; Bonde, Ruud, Skånland & Trondalen, 2013; Trondalen & Bonde, 2014). These experiences can be described phenomenologically and/or interpreted hermeneutically. Hallam (2015) maps what she calls "the power of music" in relation to other areas of life – the so-called transfer effect – through a comprehensive overview of studies on the effects of active musical engagement on e.g. learning, memory, creativity, attention, prosocial behaviour and personal development. The last chapter of Hallam's book is about music and health, and the author summarises numerous studies that document the impact of music activities throughout life,

including listening to music, on physical and mental well-being – not least through music’s potential to alleviate anxiety, reduce stress and strengthen the immune system. Hallam underlines the importance of engagement in music early in life, since the pre-school years are formative in shaping a direction for the brain’s development and the development of empathy and social engagement.

Norwegian music therapy researcher Brynjulf Stige (2002, 2012) was the first to develop the concept of *health musicking*. The concept itself incorporates a clear reference to the music researcher Christopher Small’s concept of musicking (Small, 1998), which emphasises that music as a form of activity is more than an (aesthetic, social or commercial) object, just as he points out that participation can take on a multitude of different forms. Stige asserts that when musicking is combined with health, the user is offered several opportunities or tools that they can use in relation to their personal resources and interests. Stige refers to social psychologist Gibson’s concept of affordance, while music sociologist De Nora (2000, 2007) has coined the supplementary concept of appropriation. In this view health is regarded as a bodily, creative and aesthetic action (performance) and attitude in a social and cultural context. Stige (2002; 2012, p. 186) proposes the following definition of health musicking: “... the appraisal and appropriation of the health affordances of the arena, agenda, agents, activities, and artefacts of a music practice”.

In a special issue of *Arts in Action* (Bonde, 2011) I describe health musicking as any use of music activities and music experiences to regulate physical, emotional and relational states, typically for the purpose of promoting the experience of well-being. Many empirical music psychological studies have documented how humans use music in many different ways to regulate physical and mental well-being and improve quality of life (DeNora, 2000, 2007; Lilliestam, 2013; MacDonald, Kreutz & Mitchell, 2012; Bonde, Ruud, Skånland & Trondalen, 2013). The music and health field is comprehensive and ranges from laypeople’s “self-therapeutic” use of music in everyday life to specially designed music activities and environments targeting groups with special needs (community music and community music therapy) to professionally facilitated interventions in music medicine and music therapy. Bonde (2011) describes the four main purposes of health musicking as:

1. Identity formation and development through music
2. The professional use of music and sound to help individuals
3. The development of communities and values through music
4. Creating and sharing musical environments.

## A map of the field

In the model below (Figure 1) the four goals or possibilities of health musicking (or music-ing) are placed in a quadrant model, locating music medicine and some music therapy models in relation to each other.

In the article mentioned earlier (Bonde, 2011) I give several examples of musical experiences and research projects within each of the four quadrants. Here I will briefly describe the quadrants using *playlists* as an example – that is, the use of specially designed lists of (recorded or live) music that have been developed and adapted for various health purposes.

In the upper left quadrant trained music therapists help individuals – for example, people with acquired brain injury or dementia, and their relatives – to compile a personal playlist consisting of music that has meant something to that person throughout their life. Staff at the care centre/institution/hospital can then use the playlist for various purposes in treatment and daily life, for example, to create a calm atmosphere in a care situation or (vice versa) to provide stimulation or inspiration for dialogue or training. In music psychotherapy, working with the client's meaningful 'special music' can play a crucial role (Butterton, 2004, 2008; Fønsbo, 2013).

In the lower left quadrant the example can be musical autobiographies based on personal playlists (Bonde, 2013; Ruud, 1997, 2013). Music therapy students examine their personal musical life story by selecting important examples of music that have meant something special and thus contributed to the shaping of their musical identity. Based on these personal playlists, the student is interviewed (possibly using the special interview technique (and software program) RepGrid, based on Kelly's personal construct psychology) so that patterns and lines of development in the student's musical identity are identified. Afterwards the student shares some of his/her experiences with the group of fellow students, and a common awareness is raised of situations, personal choices and values that contribute to the development of musical identity. With a similar focus, one or two pieces of "signature music" are often used as a starting point for listening groups in psychiatric hospitals and for courses or workshops in music psychology or music therapy, where participants are asked to introduce themselves to each other through the selected music. Thus, in a very short space of time everyone gets a strong personal impression of each participant.

In the upper right quadrant we find the playlists with relaxing, imagery-stimulating music and specially composed music and imagery narratives used in the *Music and Imagery in Child Oncology* (MICO) study. MICO is a Scandinavian research project evaluating the impact

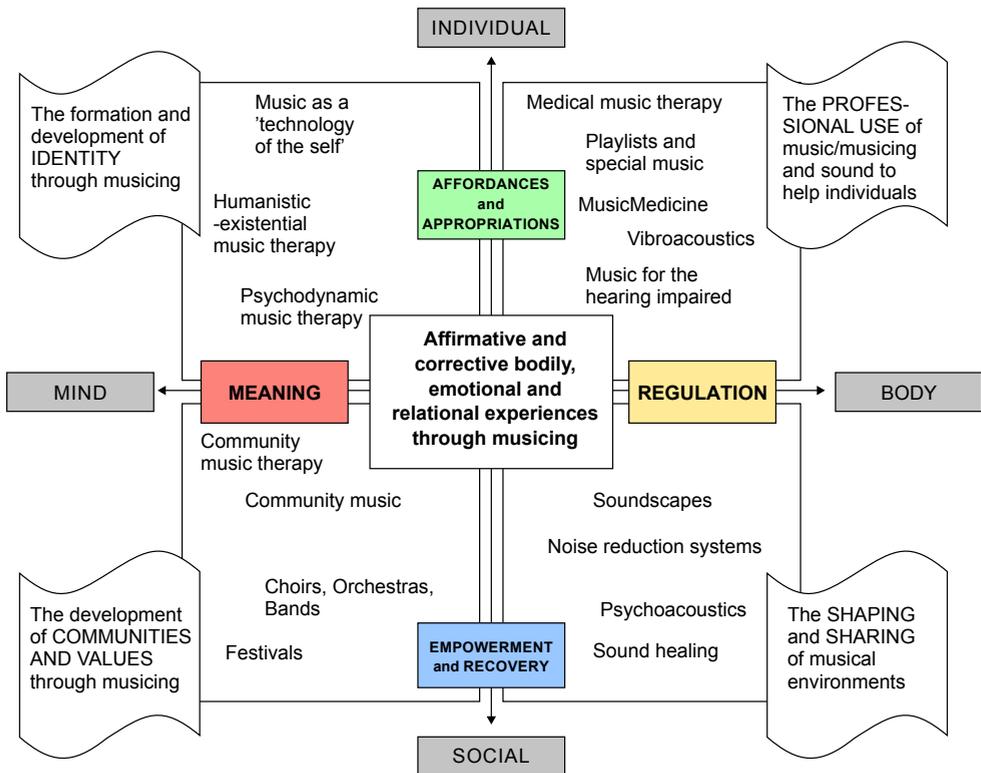


Figure 1. HEALTH MUSICING: A THEORETICAL MODEL. Inspired by G. Ansdell (2001) and Ken Wilber et al. (2013). Reference: Ekholm, O., Juel, K. & Bonde, L. O. (2015): *Music and public health: An empirical study of the use of music in the daily life of the adult Danish citizens and the health implications of musical participation*. *Arts & Health*, 8(2), 154–168.

of medical music therapy / music medicine on side effects of chemotherapy in children aged 7–17 with cancer. The playlists and the musical narratives have been developed and composed especially for this study, and they can be used in many ways, including parents reading the narratives to the music ([www.micostudy.com](http://www.micostudy.com)). Another example is the *Music Star* application with its specially designed playlists. *Music Star* was developed by music therapists for psychiatric inpatients at Aalborg University Hospital, and it functions as an app on iPads or smartphones. It has an intuitive interface where each playlist is color-coded, from blue to red, indicating increasing intensity (Lund, Bertelsen & Bonde, 2016). All the music in the 12–16 playlists (of 30–60 minutes' duration) belongs to the “supportive”

music category in the taxonomy of music for therapeutic use (Wärja & Bonde, 2014), but no information about the style or genre of the music is given – only durations and titles of the tracks and the name of the playlist. Music medicine can also be played live, as pianist Margrethe Langer Bro PhD has documented in her study *Resonance; Music as adjuvant for cancer treatment* in which respectively live, recorded and no music was offered to 344 adult lymphoma patients in primary chemotherapy at six outpatient haematology departments in Denmark (Bro, 2019; Bro & Johansen, 2017). 143 patients accepted the offer, and of the 41 who listened to patient-selected live music, many experienced improved mood and reduced anxiety. In a nurse's words: "On the days when live music is played all participants benefit: patients, co-patients, relatives and staff. It creates a very relaxed atmosphere despite the seriousness of the situation" (Bro & Johansen, 2017, p. 270).

In the lower right quadrant we can place the special music concept *MusiCure*, which was originally developed by the composer Niels Eje as a specially designed sound environment for recovery rooms at Rigshospitalet's intensive care unit 4131 (Eje & Eje, 2019). One of the author's main points is that: "Music should not be dosed according to classic recipe principles as "tablets". The perspective must be that music has an impact on basic conditions such as anxiety, stress, etc. and should therefore be used when needed and when the opportunity is there" (Eje & Eje, 2019, p. 174). The newer commercial playlist concept *Musicmind* has been specially developed for care homes/centres where the nursing staff manage the many playlists – both in larger groups where the music creates a recognisable and affirmative environment and individually where the musical needs of the individual (with/without dementia) can be met. The concept consists of two separate list types: (1) a number of style and genre-specific playlists categorised according to a conscious regulation of the individual's arousal – low arousal for calm and anxiety, high arousal for activation and revitalisation, medium arousal for accompaniment of simple activities and interaction between individuals; (2) a number of thematic playlists featuring specific artists, styles or music from specific periods or for specific purposes, for example seasons, holidays etc. ([www.musicmind.me](http://www.musicmind.me)).

## Music and public health

In 2018, as mentioned earlier, I co-edited the first major internationally based book on music and public health (Bonde & Theorell, 2018). A number of Danish and Nordic (and also international) studies indicate that there is a significant positive health effect associated with an active, sustained commitment to music on an amateur basis, e.g. as a choral singer or a band musician (Bonde, Ekholm & Juel, 2018; Løkken et al., 2018; Theorell, Knudtsen, Horwitz & Wikström, 2016). Professional musicians, on the other hand, face

several health challenges which manifest themselves in the form of occupational physical pain and stress and – as compensation – significant overuse of alcohol and various substances. Nevertheless, and maybe paradoxically, professional musicians describe their overall health as being better than all the other groups. There are only a few longitudinal studies on the relationship between health and long-time leisure activities (e.g. music as a hobby), and they point out that the health effect is probably more due to active engagement as such and the associated social community interaction in general than the specific musical activity (Løkken et al., 2018; Weziak-Bialowolska, 2016). I will return to this question in the discussion section of this article.

## **Results: Music in Danish hospitals**

Two articles on the possible health effects of music/art were recently published in the *Journal of the Danish Medical Association (Ugeskrift for læger)* (Jensen & Bonde, 2017; Eje & Eje, 2019) and, as mentioned above there is fairly extensive literature documenting these effects. One might therefore think that this knowledge is widespread in the Danish healthcare system. However, this is not the case.

A new Danish report (Jensen & Nielsen, 2019) has mapped the current use of music in Danish hospitals and hospices. The respondents were 315 senior nurses in 24 hospitals across all five regions, and in 75 per cent of the cases they reported that their department had at least one musical offering for their patients. However, a closer analysis of these offerings shows that this is no systematic effort at all, as the five most frequent options were:

1. Opportunity to listen to music on personal equipment (offered by 73%)
2. Opportunity to listen to music on hospital equipment (offered by 51%)
3. Other options (offered by 32%)
4. Instrument available in the department (offered by 23%)
5. Regular opportunities for individual music listening & background music (offered by 21%).

The three most common purposes of the music initiatives were: 1) distraction/entertainment (67 per cent), 2) relaxation & anxiety reduction (65 per cent), 3) stress reduction (55 per cent), and the most frequent initiator of the music activity was the patient him/herself (88 per cent), while in 71 per cent of the cases it was a nurse and in 33 per cent a relative who took the initiative. In May 2019 no music professionals were employed in the

Danish general hospital system, including paediatrics. This is in stark contrast to reports on the situation in the 21 Danish hospices (not including two newly established children's hospices), of which 13 (65 per cent) have employed a music therapist and two (10 per cent) a musician, which allows for a completely different range of music initiatives:

1. “Singing out” (“Udsyngning”; music to accompany the deceased when leaving hospice) (80%)
2. Option of listening to music in the patient's private room (75%)
3. Regular/occasional music events (75%)
4. Music therapy (70%)
5. Community singing (70%)

The hospital nurses' descriptions of music initiatives do not correspond with the Danes' specific experiences. In a memo report (from the *Think Tank Music and Health*, 2017) it appears that only 17 per cent of the 1,013 respondents stated that they had experienced music in hospital. In the same report 63 per cent agreed that “music should be incorporated and used more actively in the Danish healthcare system”. Only 5 per cent disagreed.

In a broader perspective the theme “arts in hospitals” has been the subject of much debate in recent years and was funded by a dedicated government initiative in 2016. Four major ‘culture on prescription’ projects have been offered to citizens on long-term sick leave in the municipalities of Aalborg, Silkeborg, Nyborg and Vordingborg. Knowledge of the effects of these projects on, for example, the participants' relationship with the labour market awaits the final reports, of which only one has been published so far (Jensen, 2019). This report indicates that participants experience improved quality of life and social engagement, and on this basis the municipality of Aalborg has decided to continue the programme without external funding. Key questions are what can the individual arts contribute, how can the activities be most appropriately mixed (also in relation to the participants' gender), and is the effort economically viable or reasonable.

## **A Nordic perspective on music in hospitals – with a special glance at paediatric wards**

Since the early 1980s there have been some music therapy and music medicine projects at Nordic hospitals, especially in paediatrics (see the chapter by Ullsten, Gaden & Mangersnes in this anthology). Today there are established music therapy programmes on paediatric

wards in Sweden and Norway. In Sweden music therapist Lena Ugglå has defended her PhD thesis on music therapy in the treatment of children and adolescents who undergo haematopoietic stem cell transplantation (Ugglå et al., 2016; Ugglå, 2019; Ugglå, Mårtenson Blom, Bonde, Gustafsson & Wrangsjö, 2019)<sup>1</sup>. In Finland one single music therapist is employed at a paediatric hospital, while music therapists are not yet employed in any Danish hospital. In Denmark researchers such as Karin Schou and I have worked on (externally funded) projects for cardiac and cancer patients (Bonde, 2008; Schou, 2008; Schou, Pedersen & Bonde, 2012). Music therapist postdoc Ilan Sanfi has been conducting externally funded research projects at Aarhus University Hospital for more than ten years, and he is head of the above-mentioned Nordic research project *Music and Imagery in Child Oncology* (MICO) that investigates the effect of specially designed music narratives and ‘guided music journeys’ for children and young people in treatment for life-threatening cancer diseases (Sanfi & Bonde, 2014, [www.micostudy.com](http://www.micostudy.com)). The project evaluates the impact of music therapy on side effects of chemotherapy in children aged 7–17 with cancer, i.e. whether music therapy can reduce nausea, vomiting and other side effects. In addition the project focuses on the psychological significance of music therapy in terms of enhancing the participants’ inner resources, resilience and overall well-being in relation to their courses of treatment. The MICO research project is the first of its kind in the world and is currently running at five university hospitals in Denmark, Norway and Sweden (Aarhus, Copenhagen, Oslo, Tromsø and Lund). These projects, supported by private foundations, put music therapy, both clinical and research, on the Danish (and Nordic) hospital map, but so far it has not led to the appointment of music therapists in Danish hospitals. In all countries there is a small number of music-medical projects (Thorgaard, 2004; Lund, Bertelsen & Bonde, 2016; Eje & Eje, 2019; Ullsten, Gaden & Mangersnes, this volume).

I have personally followed the development of the music therapy programmes at the three major paediatric hospitals in Oslo, where six music therapists are currently on the staff. The development here has convinced me that music interventions can only be established and followed up systematically if the music therapists are formally employed in the hospital as members of the hospital staff. This enables them to develop and reflect upon interventions and measures in relation to the concrete clinical practice and specific treatment culture in the individual departments. On this basis, research naturally grows out of the interdisciplinary collaboration and the need for specific documentation. The same picture can be seen in Danish hospices, where music and music therapy have been an integral part of the institutional culture for more than 10 years.

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<sup>1</sup> See the separate report on Ugglå’s project in this anthology.

## Agents in music for health promotion

As can be seen above, many different professional agents are operating in the field when music is offered in a hospital ward or at other treatment and rehabilitation centres: professional musicians who play and sing, some for a fee and as part of municipal services, others as volunteers; amateur musicians – soloists, smaller groups and choirs – who act as volunteers; and music therapists who offer a wide range of music activities. There is a widespread, basic confusion when it comes to understanding the differences between music therapy and music medicine (Gold et al., 2011). In order to reduce the confusion and create more clarity in relation to the various professional approaches to ‘music in hospitals’, I have developed an overview (Bonde, 2019) which is presented here in an extended version (Table 1).

1. **Music therapy** is the specialised expertise in the use of musical experiences to treat both mental and somatic disorders. In the Nordic countries music therapy is practised in the healthcare system by university-trained music therapists (with a master degree), and the following tasks are typical: (1) treating patients with special needs one-to-one, (2) offering tailor-made interventions and activities for larger or smaller groups, (3) developing environmental therapeutic services, (4) advising and training staff in the use of music interventions and music medicine in the day-to-day running of the institution or hospital, (5) offering support services to the hospital/institution staff.
2. **Music medicine** is the use of music (recorded or live, often using specially designed sound systems) for the benefit of hospital patients, outpatients or citizens in specialised institutions, both in the treatment and rehabilitation phase and in palliative care. Many different agents are active in this field: composers develop special music for various purposes, such as music in ambulances. Professional musicians play for patients with an explicitly stated treatment goal, such as reducing anxiety or improving mood. Music medicine must always be administered in close consultation with doctors, nurses and trained music therapists.
3. **“Health musicians”** are most often professional musicians who use their advanced skills and commitment to create joy and improve quality of life for patients in hospitals and care centres through specially designed and personalised live performances. This is neither music therapy nor music medicine as it does not have an intended treatment component, yet it may have a therapeutic

effect. The field is mainly self-regulating, and activities are currently expanding in parallel to the activities of hospital clowns, another non-treatment-oriented offer, so far financed 100 per cent by private funding.

4. **Music as health promotion.** Specially organised music experiences – in line with other cultural experiences – are included in ‘culture on prescription’ projects, among other things. In this field we are talking about authentic art experiences – not as treatment offered by therapists, but developed by the arts institutions, based on the documented fact that arts experiences can have a health-promoting function. In Aalborg the Nordjysk Centre for Culture and Health (NOCKS) operates an interdisciplinary and cross-sectoral research and development unit that initiates and documents new projects in this subfield.
5. **Music as a diversion/entertainment** in hospitals and institutions. More technological solutions are currently being developed such as commercial playlists and apps specifically aimed at adult hospital patients or people with dementia. The area is interesting in a health promotion context if specially composed music is included and/or if the choice of music is based on professional expertise on e.g. music for regulating arousal.
6. **Music pedagogy / music education.** Paediatric wards in larger hospitals may employ a music teacher or educator. Their work is framed by the primary school curriculum’s objects clause and subject descriptions. But, of course, the situation and needs of the child or the young person in the hospital are obviously based on whether they are singing, playing or teaching music comprehension.<sup>1</sup>

<sup>1</sup> See article by Taru-Anneli Koivisto and Sanna Kivijärvi in this anthology.

*Table 1. Music in hospitals. Systematic overview of agents and interventions.*

The overview is a specification of Stige’s previously mentioned definition of health musicking as it explains and exemplifies arenas (e.g. patient rooms or common areas), agendas (e.g. stress reduction or arousal regulation), agents (e.g. musicians, music educators and music therapists), activities (e.g. community singing or music listening) and artefacts (e.g. playlists, instruments or songbooks).

## The current evidence base

It is a challenge to plan and conduct controlled studies of the effects of music therapy (and to a lesser degree of music medicine) in the treatment of various somatic (and psychiatric) disorders. It takes a long time to conduct studies that involve, for example, therapeutic processes over six to ten sessions (which is typically the smallest ‘dose’ needed to achieve an effect) when statistical power is endeavoured, because only a few participants can be recruited per week or month. Nevertheless, over the years a number of effect studies have been conducted and published internationally, and several Cochrane Reviews are available. Table 2 above shows the status in spring 2018 (Jacobsen, Pedersen & Bonde, 2019, p. 438). It presents a summary of Cochrane Reviews documenting the effects of music therapy and music medicine in various clinical areas.

## Discussion and recommendations

Against this background one might expect that qualified personnel such as physicians, hospital administrators and decision-makers would respond positively and curiously to music intervention programmes and wish to employ music therapists to develop these in relation to the specific treatment culture in their hospital/ward. However, it has been my experience over the years that researchers and clinicians are often met with scepticism and that projects can only be completed when external funding is secured. The explanation can not only be that the health sector is under financial strain. For example, it is difficult to understand why many Danish physicians demand specific Danish effect studies before wanting to try out a treatment when there is international evidence of the intervention. After all, one of the biggest challenges in a small country like Denmark is that it takes a very long time to reach the sufficient number of participants in an effect study involving both experimental and control groups. One example is the above-mentioned MICO study: even though it is a multi-site study (involving five university hospitals in Denmark, Norway and Sweden and has been running for years), only 70 children and teenagers had been recruited by 18 October 2018 ([www.micostudy.com](http://www.micostudy.com)). Another example is a pending Danish study comparing the effects of music therapy and music medicine for people with schizophrenia in a strict RCT design (Pedersen et al., 2019). After three years of recruitment there is still a way to go to obtain the planned number of participants, determined on the basis of a conservative calculation of statistical power. Logistically, it is also a great challenge to arrive in a hospital as a “guest” who must fit a sensitive intervention study into an already complex hospital setting. It is therefore comforting to know that many projects have actually

Clinical population Author (year)	Number of studies and participants	Music therapy (or music inter- vention) has beneficial effects on...
Acquired brain injury Magee et al. (2017)	29 studies n=775	Gait, the timing of upper extrem- ity function, communication outcomes and quality of life after stroke
Autism spectrum disorders Geretsegger et al. (2014)	10 studies n=165  (age: 2–9 years)	Social interaction, non-verbal and verbal communicative skills, initiating behaviour, social-emo- tional reciprocity, social adapta- tion, joy, parent/child relationship
Cancer Bradt, Dileo, Magill and Teague (2016)	53 studies n=3731	Anxiety, pain, fatigue, quality of life + small effect on heart rate, respiratory rate and blood pres- sure. (24 music therapy studies, 29 music medicine studies)
Dementia van der Steen et al. (2017)	17 studies n=630	Depressive symptoms (music-based therapeutic inter- ventions and music therapy)
Depression Aalbers et al. (2017)	9 studies n=411	Short-term beneficial effects on depressive symptoms, anxiety and functioning
Mechanically ventilated patients Bradt and Dileo (2014)	14 studies n=805	Anxiety, respiratory rate, systolic blood pressure plus possible ben- eficial impact on the consump- tion of sedatives and analgesics
Preoperative anxiety Bradt, Dileo and Shim (2013)	26 studies n=2051	Anxiety before surgery, heart rhythm and diastolic blood pressure
Schizophrenia Geretsegger et al. (2017)	18 studies n=1215	Global state, mental state (including negative and general symptoms), social functioning, quality of life

*Table 2. Overview of Cochrane Review: Music therapy and music medicine with different clinical populations*

been completed. The present anthology of research articles on music and music therapy in paediatric hospital wards in the Nordic region documents the clinical specialty that is currently the most advanced at implementing music initiatives.

Based on my personal experiences and research projects as well as a literature review focusing on the conditions in the Nordic countries, I have shown that the use of music and the inclusion of music therapy in the hospital system are mainly coincidental. Two paths have been followed in an attempt to change this: 1) music therapy (and music medicine) researchers have conducted externally funded research projects in hospital wards which, in the case of positive results backed by international evidence, should pave the way for the inclusion of music therapists on the staff; 2) music therapists have been employed in hospitals based on the management's desire to add new colours to the treatment palette; they build a practice respecting the existing culture, and then they start research projects based on a multi-disciplinary perspective. The first model, which Ilan Sanfi's and my own projects illustrate, has so far not proved a viable path. The second model has been more successful as illustrated by e.g. Aasgaard's and Ugglå's research and by the Norwegian music therapists at the Oslo hospitals: three of them are currently employed as PhD fellows with projects related to their paediatric expertise. In Denmark it is easier – paradoxically – to point out the success of music therapy at hospices: not one of these positions has been based on previous research projects, and only a few of them involve preliminary documentation studies of the music therapist's daily practice. In other words, the decisive connection between the visibility and the interdisciplinary exchange and the integration of music practices into the hospital culture and daily routines are crucial.

A different aspect is the question of the special possibilities and benefits of music as compared to other arts. As mentioned in the health musicking section, many studies indicate that there may be a positive effect of active music engagement on health behaviour and perceived quality of life, and the Cochrane reviews document the effect of the music interventions in a wide range of clinical areas. At the same time some of the longitudinal studies mentioned earlier show that the link between health and lasting, stable leisure activities may be more general – i.e. linked to cultivating an active interest together with other people – than specific, i.e. related to the musical activity. It is therefore a kind of 'Dodo Bird Verdict': all serious recreational community activities on an amateur basis have a genuine health potential. This seems quite logical to me, and I therefore do not argue that music activities and experiences have a 'better' or 'greater' health potential than other art or activity forms. Instead, the specific reasoning for music activities should have a different character, an ethical and a practical one.

A significant ethical argument especially related to paediatrics is that – according to the United Nations’ *Convention on the Rights of the Child (article 31)* – all children, including children with disabilities and diseases, have a right to participate in cultural activities. In most cultures, including the Danish and Nordic ones, song, dance and music are culture and community-promoting, and music activities in the community are basically non-competitive.

Practical-social reasoning addresses the fact that it is relatively easy and not very resource-demanding to organise all kinds of music activities for smaller and larger groups – not least in kindergartens and schools, i.e. early in life, because this is the phase in life where good and health-promoting habits are acquired. Music activities – coloured by the participants’ preferences, competences and experiences – can moreover be cultivated at all ages and stages, adapted to the participants’ physical, mental and musical capacities, designed with purely musical or with non-musical goals. In the Nordic countries, for example, there is a highly developed and highly differentiated choral culture which engages children from nursery and kindergarten, later young people in the school system and adult amateur choirs of all styles, also including specially designed choirs for the elderly or people with special needs. These skills and the complementary knowledge of the health potential of singing, playing and dancing could be utilised much more than is the case today as ‘music for health promotion’, not least in rehabilitation projects.

It is my hope that I have provided some arguments that music therapists with their expertise in music therapy, music medicine and music for health promotion can provide hospitals with a range of treatment and environmental initiatives and measures that can improve conditions not just for patients but also for their relatives and for the staff.

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