PROFESSIONAL COMPETENCES OF MUSIC THERAPISTS WORKING IN POST-STROKE REHABILITATION

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Abstract
The aim of this qualitative study is to gain more insight into the skills and knowledge that music therapists feel they need, in order to work successfully with people who have had an acute stroke. For this purpose, six music therapists were interviewed about their own particular specialist education. Another interview topic for them was to recount their subjective experiences of post-stroke rehabilitation work in hospitals and health care units during the course of two projects that they participated in. The first was a project that specifically used music listening during acute stroke rehabilitation; and the second was a project, which used more active music therapy techniques, like drumming during acute stroke rehabilitation.

In the first project, patients who were bedridden in hospitals or health care units could listen to familiar songs that stimulated them in both a physical and cognitive way, and helped them to relax and regulate their moods better. In the second project different therapeutic approaches were observed and reflected upon during the piloting phase of the project and then an ideal combination of the activities was defined for the main phase. The resulting clinical music therapy model was thus created to specifically meet the special needs of stroke patients.

Three crucial factors gleaned from the interviews that were seen to affect clinical thinking were: a) knowledge concerning the neurological basis of strokes; b) good patient interaction; and c) accurate observation of the physiological and psychological aspects of music therapy. In this way, these results provide a better understanding of the tacit knowledge possessed by music therapists who work within stroke rehabilitation.

Keywords: active music therapy, music listening, rehabilitation, stroke

Introduction

Throughout the world, strokes are the principal cause for long-term disability, irrespective of age, gender, ethnicity or country. Strokes are also responsible for more deaths annually than those attributed to AIDS, tuberculosis and malaria put together (World Stroke Organization, 2011). In Finland every year, about 15,000 people suffer a stroke, whether it is a cerebral thrombosis or haemorrhage. Nationally, this means roughly 38 people per day, and it also means that strokes are the most common cause of disability in adults, as well as being the

third most expensive affliction to treat. An essential goal in rehabilitating a stroke patient is to give them the means to once more carry out everyday activities and leisure pursuits. Only 15-20% of stroke patients are able to get the kind of multiprofessional rehabilitation this requires, and the situation for older people is even worse (Duodecim Medical Society, 2006; Takala et al., 2010). Music therapy within neurorehabilitation settings is still a relatively new phenomenon (Baker & Tamplin, 2010). Yet although a number of former studies have striven to show the importance of using music or music therapy in stroke rehabilitation (Särkämö, 2011; Thaut, 1997; Hommel et al., 1990; Soto et al. 2009; Bradt, Magee, Dileo, Wheeler & McGilloway, 2010) not so many have been made from the perspective of the music therapists themselves. Considering these are the people most involved with this part of the stroke rehabilitation process, it seems only fair to ask them more closely as to how it actually occurs. An interview study was therefore carried out, to gain more insight into the skills and knowledge that music therapists feel they need in order to work successfully with people who have had an acute stroke. In this respect, the study assumes that actually working with stroke patients is the best way to supplement existing knowledge in the field. The aim of this study is therefore to gain more insight into the skills and knowledge that music therapists feel they need to have in their clinical work. The implications of this research, are that having knowledge about what is needed to work with this specific and challenging client population will hopefully facilitate the entrance into this type of work for music therapists.

The Consequences of Stroke

A stroke, or cerebral circulation disorder, normally occurs as a result of the bleeding, or blockage of a blood vessel within the brain. Strokes crucially affect the quality of life in physical, cognitive, and psychological ways. Confusion, depression and problems with thinking and memory are very typical cognitive effects (Knight & Wiese, 2011; Hackett, Anderson, House, & Xia, 2009). Other common disorders are related to orientation, verbal functioning, spatial and constructive perception, calculation, concentration and information processing (Tatemichi et al., 1994; Hochstenbach, Mulder, van Limbeek, Donders & Schoonderwaldt, 1998). Out of all of these however, motor dysfunction and aphasia are the most well known symptoms. A less known but equally common syndrome following stroke is spatial neglect. A patient who has suffered a stroke in the right hemisphere can behave as if objects to the left in their visual field did not exist (Unsworth, 2007).

Neuronal plasticity is a significant feature of early postnatal life, but it becomes less prevalent in the adult brain (Castrén, 2010). Such plasticity is also very important in stroke rehabilitation, and has therefore been the focus for some novel interventions in the field (Kleim, 2010). Our present understanding, of acute strokes and patterns of spontaneous recovery, also indicates that the most critical period of time for determining the functional capacity of stroke

patients, and thus the specific details of the rehabilitation, occurs within the first few weeks after an attack (Palo, Jokelainen, Kaste, Teräväinen & Waltimo, 1996).

An essential goal in rehabilitating stroke patients is to get them back in control of the skills they need for day-to-day living and simple leisure activities, otherwise known as their activities of daily living (ADL). According to the International Classification of Functioning, Disability and Health (ICF) that was drawn up by the World Health Organisation, the ADL are distributed over three domains: Self-Care; Domestic Life; and Community, Social and Civic Life (WHO, 2001). As mentioned previously, the most well-known symptoms of stroke are motor dysfunction and verbal difficulties. However, cognitive impairment, neurological deficits and depression are also all very common symptoms after a stroke, and yet although 60% of stroke sufferers have some form of cognitive dysfunction, only a few studies focus on them and they are often overlooked in clinical practice (Nys, 2005). From the basis of clinical experience, it seems apparent then that active music therapy has an important part to play in post-stroke recovery, precisely because it can affect these cognitive, emotional and motor abilities.

Music therapy Research in Stroke Rehabilitation

Even though research into the effects of music and music therapy within healthcare has grown rapidly over the past 20 years, there are not so many research reports about the use of music or music therapy specifically for neurological rehabilitation. Hommel et al. (1990), and Soto et al. (2009) found in their studies that music listening can improve left-side visual awareness in stroke patients suffering from left-side neglect. In Denmark, music therapists used the method of Guided Imagery and Music (GIM) in rehabilitation to help such patients while listening to, for example, Mahler's *Fourth Symphony*. The results were very promising: after nine group therapy sessions, patients were able to think more easily in terms of images and metaphors, and because they seemed to express themselves better emotionally, they could also relax better than before. And yet this method of using imagery when listening to music is demanding, requiring a certain amount of plasticity in the damaged brain, because it needs both hemispheres to be fully activated (Moe & Thorstrup, 1995).

For the human brain, listening to music entails a widespread activation of temporal, prefrontal, premotor, and parietal cortical areas. And these parts of the brain control many cognitive functions such as attention, semantic and syntactic processing, not to mention memory. It is no wonder then, that in receptive music therapy, listening to music is more than just an enjoyable leisure activity, helping one to relax or escape from daily worries. It also requires activation of parts of the brain that are vital to ADL. But perhaps the most significant influence music has is on the emotions, and it can be used to regulate them as well as mood and attention (Sloboda & O'Neill, 2001; Trainor & Schmidt, 2003; Baumgartner, 1992).

When combined with standard care, music therapy therefore has a beneficial effect because it enhances neurological functions, speeds up the recovery of cognitive functions, and improves the mood and quality of life experienced by clients (So-Young & Grocke, 2008; Thaut & Abiru, 2010). Music listening has also been found to particularly enhance motor, cognitive and emotional recovery right after a stroke, and it has been specifically associated with better relaxation, increased motor activity and an improved mood, while music combined with audio book listening has been found to provide refreshing stimulation and evoke thoughts and memories about the past (Forsblom, Särkämö, Laitinen, & Tervaniemi, 2010). The results of these studies highlight the clinical importance of providing stimulating and pleasant leisure activities after a stroke and particularly encourage the use of music in stroke rehabilitation. Music therapists in the music listening-project (MuKu) (Särkämö et al., 2008), focussing as it did specifically on music listening, realised that patients could still listen to music whatever their disabilities. Music listening was also for some of them the only form of rehabilitation they could get at the start. Another advantage was that it was an unrestrictive kind of activity, which they could share with nurses or each other too. For the patients, who otherwise found it hard to have a normal conversation due to being seriously ill, it was easy to talk about different kinds of music they liked and the people this music involved. And for the nurses, talking about music they had listened to with patients often provided a good way into a conversation. This kind of normal conversation focussed on positive and healthy sides of the patient's life and reinforced any progress that was being made in their health (Laitinen, 2008).

There is also more robust experimental evidence to suggest that the clinical use of music can enhance motor, cognitive and emotional recovery after a stroke. Cochrane Reviews are systematic reviews of primary research in health care, and are therefore essential tools for accurately summarising the evidence of the effects of a particular healthcare intervention in a way that minimises bias. In addition to occasionally providing clear clinical answers, when several smaller apparently conflicting studies are brought together, such reviews are a rich resource for people planning to fund or undertake future healthcare research. For example, the Cochrane Review "music therapy for acquired brain injury" (Bradt et al. 2010) examines the effectiveness of music therapy used on patients with Acquired Brain Injury (ABI), by comparing standard care alone for ABI with that of standard care plus various therapies for ABI. It specifically compared the effectiveness of each across a range of abilities and attributes: gait, upper extremity function, communication, mood and emotions, social skills, pain, behavioral outcomes, daily living skills and the ability to cope with adverse events. The results suggested that, of the therapies, rhythmic auditory stimulation (RAS) is the most beneficial for improving gait parameters in people who have suffered a stroke. This technique uses strong rhythmic cues conveyed through music to drive rhythmic movements.

Music therapists Working in Stroke Rehabilitiation

Not as many music therapists are employed in stroke units and hospitals in Finland as are physiotherapists, speech therapists or occupational therapists. As the number of music therapists with substantial clinical experience of neurorehabilitation is small, research into how effective music therapy is still in its early stages. Nevertheless, active music therapy in group sessions has been found to have a positive effect in a significant number of rehabilitation units. These clinical methods are growingly generalised in acute stroke rehabilitation. One such successful therapy-oriented method is Figurenotes© (Laitinen & Pataila, 2000; Laitinen 2003, 2008) that promotes neurocognitive rehabilitation by helping to strengthen a player's commitment and by encouraging independent, unassisted practice. From the point of view of information processing, the cognitive process involved in playing an instrument with the Figurenotes method is very similar to that involved in reading (Resonaari, 2012). Another intervention used in Finland is Physioacoustic Sound Wave Therapy which focuses on the musculoskeletal system, releasing stress and tension through deep body massage. It works on the circulation, lowering high blood pressure and reducing both anxiety and pain. There is evidence that physioacoustic stimulation also has an effect on insomnia, spastic muscles, and pain (Lehikoinen, 1988; Ala-Ruona, 1999, 2003; Punkanen & Ala-Ruona, 2012).

As previously mentioned, an essential goal in rehabilitating stroke patients is to get them back in control of their ADL. Speech therapy, occupational therapy, physiotherapy, neuropsychological therapy, art therapy and music therapy are all beneficial in this rehabilitation process. However, for most of the stroke patients these rehabilitation services are not available (Duodecim, 2006; Takala et al, 2010).

Fortunately however, in the last few years two projects that have been available are MuKu and MT-STROKE, the very projects where music therapists have been able to use their interventions in the rehabilitation of acute stroke survivors. The six music therapists who were interviewed for this study were working in these projects. Indeed, the projects provided a perfect opportunity to look at what music therapists actually do in closer detail.

In the two-month duration of the MuKu-project, music therapists were meeting with patients once a week, encouraging them to listen and share their chosen music with the therapist, while at the same time also bringing in new listening material. Results showed that recovery in the domains of verbal memory and focussed attention improved at a significantly faster rate in the music group than in the language and control groups. The music group also experienced less depression and confusion than the control group (Särkämö, et al., 2008). In MT-STROKE (Ala-Ruona, 2009), a multidisciplinary group, consisting of neurologists, neuropsychologists, physiotherapists, and music therapy experts developed a music therapy model where structured and non-structured episodes would alternate within each therapy session. Different therapeutic approaches were observed and reflected upon during the piloting phase of the

project, and finally an ideal combination of the activities was defined. The clinical model that resulted from this, aimed to meet the special needs of middle cerebral artery (MCA) stroke patients. And it is the combination of these approaches, based on multidisciplinarity and clinical theory, which makes the model special, as every single music therapy approach within it is already individually well known (listening to music, doing rhythmic exercises, using clinical improvisation, utilising rhythmic motor series, using music for relaxing, and having therapeutic discussions). In order to implement the model according to the agreed protocol, the professionally trained music therapy clinicians underwent a further training programme. The training consisted of lectures, clinical exercises, multidisciplinary consultations, and real-time observed pilot sessions, followed by group supervision. In the clinical work, the focus has been wide and has covered the areas of cognition, emotion and motor function, while the therapeutic approaches and interventions have been adjusted to meet the individual needs of clients and their current levels of functioning.

Method

Participants

The six participating music therapists all signed their informed consent to interviews, and it was made sure that all of them specifically had experience in acute stroke rehabilitation. Five of them had also undergone special training in the clinical model developed by the multidisciplinary team in MT-STROKE (Ala-Ruona, Bamberg, Erkkilä, Fachner, & Parantainen, 2010).

Data Collection

Interviews were considered to be an appropriate and effective method for data collection, as they allowed for a more in-depth interaction between the researcher and the clinician. This made it possible to ask for clarification, and thus helped the researcher gain a more elaborate, thorough, and comprehensive understanding of the interviewees' personal experiences (Denzin & Lincoln, 1994). The interviews were consequently conducted in an open-ended manner, and the material was gathered during the years 2009-2010.

The first question in the interviews was: What kind of experiences do you have when working with music or music therapy in acute stroke rehabilitation? It was very open and broad-based, precisely so that the questions to follow could be more carefully honed to the experiences described in the answers of each individual interviewee. The specialist training they had received, as mentioned before, consisted of lectures about neurology and neuropsychology, clinical exercises, multidisciplinary consultations, and real-time observations of pilot sessions, followed by group supervision. Because this kind of model for team-training is new in Finland, therapists were encouraged to talk freely about their experiences of this with other open questions such as: "How was your specialist training?" and "What are the benefits of your specialist training, as you see it?" All but one of the therapists were interviewed for a total of one and a half hours each. The interviews were recorded in audio and transcribed word

for word. As the research project progressed, the clearer the focus of the study became.

One of the interviews was more in-depth however, as it was accompanied with video material from three separate patients that provided points of reference throughout the course of the interview. In this way it was easier to gain more understanding of this music therapist's (and hopefully, by extension, other music therapists') experiences of rehabilitating people who have suffered an acute stroke. During the interview the music therapist showed three 60-minute video clips for each of the different patients. One was taken from the second session, another from the tenth, and the last from the nineteenth session at the end of their rehabilitation programme. Altogether this meant that nine hours of video footage was watched in preparation for this single interview, so it effectively required 6 times longer than the other interviews. This interview was also recorded and transcribed word for word.

However, by watching such extensive videos of one music therapist working together with a number of patients and talking over the findings from the preliminary interviews with the other music therapists could then, in comparison, be properly evaluated. In other words, the in-depth interview enabled some parallels to be more confidently drawn with the other therapists' interviews. It also helped the researcher understand the most pivotal and meaningful factors in stroke rehabilitation for a music therapist. Recordings of the music therapy sessions to be discussed were made on video, which could then be referred to during the in-depth interviews, and member checking was made after first collecting and analyzing the data. Observing the videotapes of music therapy sessions meant the researcher could have access to a genuine setting where music therapists worked. Topics, areas of focus, and data for the research came largely as planned from music therapists' own personal experiences, areas which are of course very sensitive and therefore require an in-depth understanding.

Although in qualitative research each situation is unique, and there is no possibility of generalization, other music therapists should still be able to relate and apply the results of this research to their own work because of similarities that they prompted them to think about (Wheeler & Kenny, 2005; Wheeler, 1999).

Data Analysis

Open questions were preferable to a survey for a number of reasons. Firstly, there is no established terminology as yet that would have adequately communicated relevant observable results to everyone in both a hospital setting and music therapy programme. In this respect this research is grounded in the data and can thus be considered as a modified grounded theory approach (Amir, 2005, p.374). Secondly, a survey would have made it far more difficult to get genuine responses from the music therapists, as it might have framed questions, and therefore answers, in such a way as to be misleading and overly representative of the researcher's point of view. To get a new and authentic understanding of what music therapists really do, a phenomenological way of think-

ing was necessary. By interviewing music therapists about their particular experiences while working specifically with patients in acute stroke rehabilitation, more pertinent data could be gathered. Aigen (1991, 1993) has advocated qualitative research as being the most appropriate for music therapy research, because the focus in both is on the process. The awareness of changing dynamics in the research process reflects an equal awareness of the same dynamics in music therapy sessions. Qualitative research and especially phenomenological thinking in content analysis therefore seems the ideal way to study the process of how music therapists feel they develop the skills and knowledge they require in order to work successfully with stroke patients. It was the same researcher who both interviewed the therapists and performed the qualitative analysis. This was a considered choice, as the process of analysing data for qualitative research generally requires researchers to immerse themselves in the data, looking for patterns, themes and relationships (Wheeler & Kenny, 2005). The analysis was an inductive process that aimed to whittle down the specific data, gleaned from the open questions of the interviews, into a more applicable form. In order to filter out irrelevant data, only the information which met the focus of the present study was kept for the final data analysis (Tuomi & Sarajärvi, 2009). This type of purposeful sampling was performed on a computer using the HyperRESEARCH application (version 2.7), which helps to organise and code segments of text. For this to occur, the verbal expressions of the interviewees had to be first converted into 107 meaning units in order for it to be encoded. Then, with the verbal data now converted into machine-readable codes, they could be compared and sorted into categories of meaning.

Categorisation and analysis were then checked afterwards by the research supervisor and the member check was performed by the same music therapist who had given the in-depth interview earlier. Member checking was made to confirm that the categorisation and analysis had been done correctly, and that the results still corresponded to the information that music therapists had given in interviews.

Results

The results of the data analysis were 15 categories of meaning unit, each of which fell into one of three themes (See Figure 1).

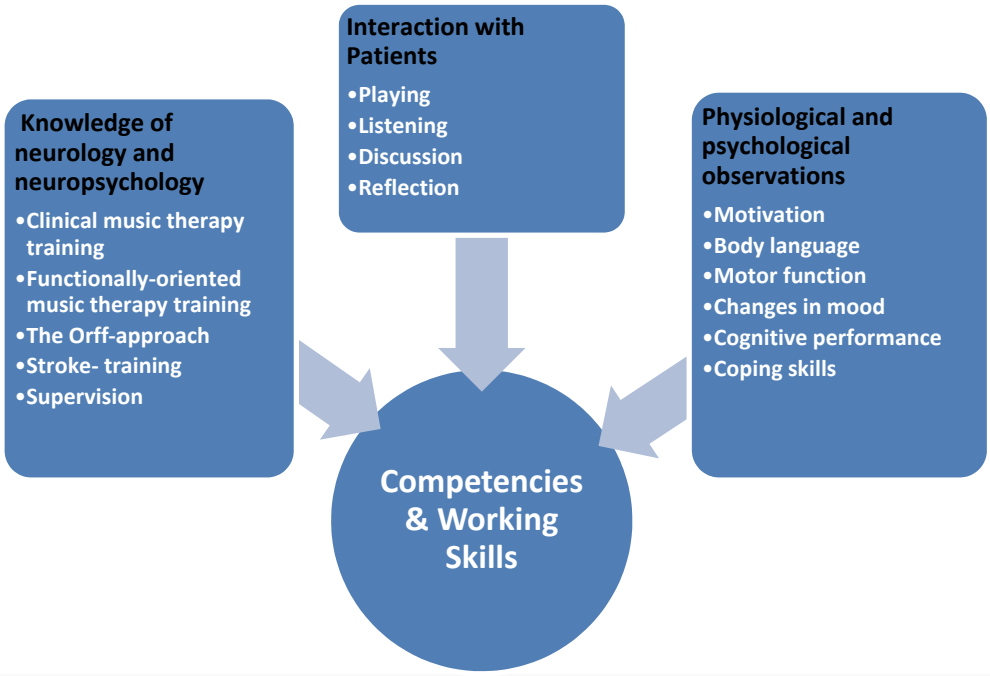

FIGURE 1 The competencies and working skills of music therapists in acute stroke rehabilitation.

Here is an example of how one such meaning unit was categorised:

> Meaning unit: "At the end of the session we always have a nice conversation while listening to music"
> Category: Discussion.
> Theme: Interaction with patient

Each of the three themes that arose from the analysis of these verbal responses is discussed in more detail in its own section below, with a corresponding table for each (see Table 1, 2, 3). The tables depict three crucial factors gleaned from the interviews that were seen to affect clinical thinking: a) knowledge concerning the neurological basis of strokes; b) good patient interaction; and c) accurate observation of the physiological and psychological aspects of music therapy. Within each theme there are five categories (so 15 in total), with an example from the data given for each category.

Although standard music therapy training and education were seen to be adequate enough to meet entry-level professional requirements, therapists who worked consistently with patients suffering from one particular kind of neurological impairment, such as stroke, felt the need to gain more specific knowledge and specialist training about the particular disabilities that a stroke entails. By discussing among themselves new techniques that they had discovered in therapy sessions when, for example drumming, they could figure out

what was best for their patients. And it is precisely these kinds of technique, developed by music therapists in practice that this research wants to shed more light on.

Theme 1: Knowledge of Neurology and Neuropsychology

Clinical, as well as functionally oriented music therapy training had provided the music therapists with a basic neurological understanding of the kind of disability they were facing, and how they might help their clients by drumming. But most of them only gained the really relevant and specific neurological knowledge required once they started actually working with stroke patients and training themselves therein. The Orff approach has not only been used as a way to teach music, but as a form of therapy to help with memory, dexterity, and agility in elderly individuals who often become weak with old age (Bitcon & Hampton, 1976). This approach also contributed significantly to the models that were used in the MT-STROKE project. The Orff approach, where all the concepts are learned by drawing out a person's inherent affinities for rhythm and melody and allowing these to develop in natural ways, seemed to be very useful for the stroke patients, and thus for the therapists. One reason given, was that this approach addresses not only the praxial concepts of music, like rhythm and tempo, but also its aesthetic qualities (Estrella, 2012).

The clinical model for active music therapy in the MT-STROKE project was based on a combination of structured musical exercises, pitched at various levels of difficulty; dynamically rhythmic playing, with sequences of movement that changed; interactive clinical improvisation; music-assisted relaxation; and therapeutic discussion. The training that this project provided, helped music therapists understand the neurological importance of certain techniques, such as being in the right position when drumming. It also helped them to see more global consequences, such as how important it is in rehearsals to motivate patients to play to the best of their ability.

By reflecting upon their way of working through the use of real-time observation and supervision, therapists also got a better understanding of the problems facing each patient and could provide more effective rehabilitation. During the specialist training that MT-STROKE provided, music therapists also learned to pay particular attention to a phenomenon that occurred quite often with stroke patients, when they sometimes got stuck doing one particular movement. The training required them to start the same action all over again from the beginning, with music therapists giving both verbal and musical hints, as well as intervening, if necessary, to help and motivate patients to progress with their drum playing. The important thing was not to learn and adopt patterns and models that could in the long-term prove neurologically detrimental, as one therapist describes here:

At first it was difficult for me to stop the clients, when I noticed that the patient was using a model of drumming that was less beneficial. I learned that in a neurological way it is important not to learn such models, so that's why I stopped the drumming immediately and we did the exercise all over again in a more neurologically rewarding way.

The drumming was interrupted only if patients were losing the intended drumming model, and were stuck playing in a position that was creating difficulties for their hand or otherwise. In the video, the different techniques the therapist used to encourage optimal drumming positions could be seen, and all of these examples were explained from a neurological perspective.

TABLE 1 Knowledge of neurology and neuropsychology

Clinical music therapy training	**Functionally-Oriented music therapy training**	**The Orff approach**	**Stroke-training**	**Supervision**
In Clinical music therapy training we were given some background knowledge in neurology, but not that much. This kind of stroke-training could be very useful to add in clinical music therapy training, too.	Functionally-Oriented music therapy models are a good basis for building-up sessions with patients. For me it was easy to learn codes for playing, but some music therapists found them difficult	With Orff approach we build up drumming sessions, that could be used directly in rehabilitation. The Orff approach was very useful and easy to learn	Stroke-training has been very useful. The neurological information it provided has been especially important. The lectures and advice that we got from neuropsychologists proved very important: they explained in a clear and understandable way, the kind of symptoms and difficulties patients might have. It is very usual, that stroke patients get stuck doing one particular movement. Then I have to get them to want to move on by helping them understand why it is important to do the rehearsal in a right way.	I am hoping there will be more supervision in the future, because, with these patients, it feels very important. At first it was difficult for me to stop the clients, when I noticed that the patient was using a model of drumming that was less beneficial, I learned that in a neurological way it is important not to learn such models and that's why I stopped the drumming immediately and we did the rehearsal all over again in a more neurologically rewarding way.

Knowledge of neurology and neuropsychology was therefore important in a very practical way in these music therapy sessions. But as we have glimpsed already, it was perhaps even more important that music therapists should develop first and foremost a good relationship with their patients, as without suitable motivation, no such knowledge would be implemented.

Theme 2: Interaction with Patients

Music therapists found the actual interaction with patients to be the most important factor in keeping the sessions therapeutic, encouraging and positive. And, according to feedback, the patients shared this opinion. Music therapists therefore built up a warm relationship with their clients, as can be seen in the next data excerpt:

It is very important, that the patient feels that I am here just for him - that I totally concentrate on him here and now. I was actually quite surprised that the interaction with the patient was so intimate. I tried to listen to him and encourage him in every possible way I could, and in an emotional way too, so that the positive feeling would last all the while we were working together.

Because the rehabilitation programme lasted a full 20 sessions, music therapists had every opportunity to build up a good relationship. Music therapists were there for their clients, looking out for them, listening to them, empathising with them, encouraging them to do their best, to practise and to discuss the situations they found themselves in. For example, one client who was one of the most badly injured, nevertheless had a great sense of humour and so the session was correspondingly geared to his humour as much as the music therapy itself. Good interaction with the client was essential to enable this.

A very important part of each 60-minute session was therefore the start, when they had a discussion about the things that had happened since the last meeting, and how the patients had been doing in other contexts (i.e., at hospital or at home). The therapist could ascertain at this point what mood the client was in for the day and therefore at what pace to set the activities - for example, if the patient was in an aggressive mood the therapist would slow things down; or if the client was in a curious mood, the therapist would explain why they were putting the drum in a particular position for them. Different clients would require very different ways of communicating, particularly as an essential part of music is fun and therefore quite subjective. During the session the patients were not just left to play, but the level of interaction was maintained by encouraging and helping them to play to the very best of their abilities. At the end of each session there was also a moment to listen to music, reflect, and to give global feedback about the whole recovery process, and talk about how they felt the stroke rehabilitation was progressing. This also gave the therapist a chance to step back and reassess how the interaction with each client was progressing, and what things if any, needed changing for the next session.

TABLE 2 Interaction with patients

Playing	Listening and sharing	Discussion	Reflection
When I think how difficult and big a thing the stroke must be for my patient, it seems natural to want to encourage him each time he manages to overcome his difficulties and play well. I am a little bit concerned about the huge proportion of time we spend drumming. I wanted to give him a rehearsal that could help him to use his wrist in a better way, as I noticed he could do it.	As a music therapist I was surprised at how intense and empathic the relationship with the patient was. The whole time I tried to listen to the patients needs, while also encouraging him in both physical and mental ways to pick up on the positive feeling. I want to be intuitive with my patient, if there is something he needs to rehearsal more or talk about. It is very important to build up a confidential relationship with patient, because we only meet 20 times	... It is therefore very important that the actual moments of interaction and contact are good between us, and that there's a confidential atmosphere when we work together. I wanted to make my music therapy sessions very human, so that there was always the possibility for example, to stop and talk about things. At the end of the session we always have a nice conversation while listening to music. The only place for discussion is at the beginning and at the end. I don't think it´s really enough.	I think that the interaction and relationship are very important: here is someone who has had an acute stroke which has probably turned his world upside down. He doesn't know what the future holds, or where this will lead him. He doesn't know if he is going to get any better or perhaps if he will ever be able to move one side of his body again. There could be all sorts of thoughts occurring to him… And then there is me, a new music therapist, who is a total stranger to him

Theme 3: Physiological and Psychological Observations

The music therapists all mentioned how important and challenging it was, to continuously be paying attention to each of their clients while simultaneously conducting the sessions:

As a music therapist I have to think more and more about the context I am working in with each patient: what kind of person they are, and what they need at that precise moment. It´s as if I had four canoes and had to jump from one to another continually.

The sort of things they were looking out for was each client's motivation; their body language; what motor functions were particularly difficult; any changes in mood; their cognitive performance; and those things that clients were able to cope with well, and not so well. The music therapists were well aware of the fact that one of their greatest challenges was to successfully observe all these aspects at the same time in their stroke patients. As one of the therapists succinctly put it:

Observing and acting upon many things at the same time - what happens in a patient´s mind; how his body is functioning; which direction I should move the drums for him; and how to improve his motivation - all that has been very challenging.

Usually patients were motivated, which made the therapy easier, but very often they also got quite exhausted in sessions. Observing this in time was very important to ensure that they did not get stuck in one particular movement. The music therapist had to watch carefully to ensure that intervention did not come too late. As mentioned above (Theme 1), the drumming would be stopped immediately, so that the patient didn't start following any detrimental models.

Another priority for observation among the therapists was each patient's mood: in other words, to be aware of how they might be coping with mood swings, since depression is a very typical symptom among stroke sufferers (Berg, Palomäki, Lehtihalmes, Lönnqvist, Kaste, 2003). In fact, some of the therapists suggested that more attention should be paid to a patient's mental health immediately after a stroke, than is currently the case.

TABLE 3 Physiological and psychological observations

Motivation	**Body language**	**Motor function**	**Changes in mood**	**Cognitive performance**	**Coping skills**
..how to improve his motivation has been very challenging. This patient always wanted to hear the purpose of drumming; how it affects to him. After that he concentrated better in rehearsals.	From body language I usually figure how badly stroke has affected my patient. In the end of rehabilitation you could see the improvement in body language, too.	Observing and acting upon many things at the same time - what happens in a patient's mind; how his body is functioning; which direction I should move the drums for him; has been challenging.	I have noticed that there are some differences in mood; In the beginning patients feel sad, but in the end of rehabilitation they usually feel less sad.	I have been wondering, if my client actually realise how badly he is injured. I wanted to ask him, if he thinks he is going to be all right, but I don't dare to ask, because he doesn't want to talk so much. Concentrating is difficult for my patient.	In cases where patients are depressive, more attention should be paid to their state of mind and psyche. One of the patients used humor to cope with his disabilities

DISCUSSION

The goal of the present study was to gain more insight into the skills and knowledge that music therapists feel they need to have when they work with acute stroke patients. The three aspects to this knowledge base were found to be firstly an educational background in neurology and neuropsychology; secondly careful interaction with patients; and thirdly observation that takes in both physiological and psychological factors. The discussion is therefore structured according to these aspects and related to the findings of the analysis.

Educational Aspects (Neurology and Neuropsychology)

By speaking about the specific skills required, it has become more clear what could possibly be fed back into the educational system to make training for future music therapists more effective. Indeed, this issue is becoming crucially more important, as the education and training of music therapists has been discussed and debated a lot in recent years (Goodman, 2011). According to David Luce (2006), director of Music Therapy at Chapman University in California, there is a need for much more discussion and research to explore the teaching methods and pedagogy behind the education and supervision of music therapists. Educators and clinical supervisors need to understand each student's epistemological development, and the process of learning needs to be based more on reflection and self-experiential learning (Luce, 2006). Music therapists in this study seemed to share this perspective, paying more attention to the effectiveness of learning by actually doing. They also highlighted the need for supervision and a commensurate amount of reflection after working in a new way with a patient. The findings from the interview data suggest that there is a need to look further at music therapists' clinical work and its possibilities for education.

Knowledge of neurology and neuropsychology most definitely helped music therapists during their working. And by working with methods they had learned from the Orff approach or functionally oriented therapy in stroke training, they knew how to rehabilitate stroke patients the best they could. However, there seems to be no single correct way to do music therapy in clinical work. Therapists use a variety of techniques depending on the clients involved. One thing that was common to all the interviews in this study was that their clients were the priority. The patient provided the determining factor in producing the appropriate therapeutic techniques. It was also interesting to find out how many of these techniques were seen to have been acquired through the therapists' education and how many from their work experience.

Lindvang (2010) in her study has gone further to explore the various phenomena that are the result of self-experiential learning, personal therapy and training among music therapy students in Aalborg University. Self-experiential learning was contextualised clinically and professionally, by asking qualified professional music therapists to evaluate the influence of their self-experiential training on current clinical competencies. The results showed that for those

therapists whose self-perceived ratings of clinical competence were very high, self-experiential learning had a strong and important role to play. Being conscious of their role as a music therapist and being able to handle and understand counter-transference was also seen to be very important. The current emphasis in clinical music therapy training in Finland and Denmark is nevertheless typically psychodynamic, although with further training students can focus on more specific areas of music therapy. In Denmark it seemed that meeting the client, in other words following their specific needs, was what music therapists felt most confident about, and this was confirmed in the present study.

Felder and Silverman's (1988) model of learning acknowledges the fact that people handle information in a variety of ways: it depends firstly on the senses used to perceive the information; then in what proportion emotion, reason and intuition are used to reflect and act on this information; and it also depends on whether this reflection is steady or sporadic. Just as learning styles differ, so do the methods of teaching: ranging from simply lecturing to students, to demonstrating or leading students towards self-made discoveries. Some teachers might be more theoretical, others more practical; some will focus on memory, and others more on understanding (Felder & Silverman, 1988). The music therapists featured in this study all received a professional education in music therapy, but it would be instructive to know just how effective such an education is.

Langan & Athnasou (2005) attempted to measure this effectiveness with Alexander's Model of Domain Learning (1997), in which music therapy students were tested and the results compared with students of art therapy, dance therapy, counselling therapy, and music. They indicated that music therapy students indeed showed the highest levels of knowledge and interest in the domains most important for their job. The level of interest was significant, as results also suggest that specific learning occurs most effectively within the identified domains of interest or expertise (Langan & Athnasou, 2005). Another very important part of a music therapist's training is to develop self-reflection skills, which are best achieved during clinical practice by working as a music therapist under supervision. For example, Baker and Krout (2011) have reported the findings of a pilot study, where music therapy students from Australia and the USA used song writing to share their experiences in clinical training. Although students were concerned about their beginner level of competency in music therapy, they also made it clear that they had nevertheless been able to learn a great deal from their clients, which was a new finding from the educators' point of view (Baker & Krout, 2011).

As confirmed in the interviews here, from the very start of clinical training music therapists must work with all of their senses and be fully aware of the present moment. To observe, interact and utilize their neurological knowledge successfully, they have to reflect upon their way of working, and try to understand what is going on in their patient's mind at the same time. Empathy is also needed when they are building up a relationship with their patients, and yet they must also feel confident enough to intervene where necessary. This deli-

cate balancing act means, according to Bruscia (1998), that during the therapy session they must continuously move from the therapist's world into the patient's world so that they can reflect on the experience from that person's perspective, and yet they must not stray too far either side of the border between these two worlds. It is particularly important for a music therapist to understand the phenomenon of transference and countertransference when interacting with clients.

Benedikte Scheiby (2005), who has been working as an adjunct assistant professor in the music therapy program at NYU, states that the identification and management of countertransference is one of the most essential skills required by a music therapist (Scheiby, 2005). The quality of interaction with patient has been a very important theme in this interview-study. According to the findings, music therapists had good interaction skills with their patients. In both projects, music therapists were starting with the patients that were already in hospital. They treated them however, as they would treat someone outside hospital, asking about their favourite music and hobbies which, as Laitinen (2008) from the MuKu project notes, was particularly appreciated by the patients.

Interaction with Patients Using Music and Conversation

Music therapists are often asked whether it is music therapy, or just music in medicine that they are doing. According to Dileo and Bradt (2009), it is important to make a clear distinction between music interventions administered by medical professionals and those implemented by trained music therapists. This is because music therapists tailor their interventions to meet each patient's specific needs, and engage the patients also in actual music making. In order to achieve the clinical goals, there is a systematic therapeutic relationship established with the patient first, which includes assessment, treatment and evaluation.

In psychotherapy, as well as in music therapy research, there has been an increasing focus on providing evidence that only certain approaches or techniques work effectively for certain groups of clients. This is an attempt to meet all the requirements necessary to provide evidence-based practice (Ronnestad, 2008). But as a consequence of the need to provide as objective evidence as possible, which can compromise the subjective relationship between therapist and patient, some of the advantages that a therapist brings to the therapy are lost. And because a number of studies have shown that the quality of the relationship between therapist and client is indeed pivotal to the effectiveness of any therapy (Orlinsky, Ronnestad & Willutzki, 2004), this is a serious consideration that must be taken into account.

In this study, music therapists believed in the effectiveness of their work in post-stroke rehabilitation, and this was partly due to the fact that the patients themselves also appreciated the value of music therapy. One of the patients in MT-STROKE summarized his experience as follows:

This has been excellent, and I am truly grateful that I got music therapy. I have progressed a lot. In my music therapy it felt like the elements of physio-

therapy, occupational therapy and neuropsychological rehabilitation were combined successfully.

One thing that was common to all the therapists interviewed in this study was that their clients were the priority, and this no doubt affects the quality of patient interaction in terms of intensity and sensitivity. Indeed, it could be argued that being too objective about patients and their problems can actually hinder recovery, whereas being more personal with clients might actually improve their rehabilitation. For example, Columbia University Medical Center trains physicians, scientists, public health professionals, and nurses in this (Columbia University, n.d.). The Programme in Narrative Medicine (PNM) was established in 1996 to break down barriers in health care by providing practitioners with the clinical tools to listen, encourage patient stories, honor the intentions of their patients' and their own stories, and share thoughts and concerns. As a result, patients are treated more empathically and have the opportunity to engage more fully with their own care; understanding and articulating it beyond simply a description of physical symptoms.

This is in contrast to many prevailing methods of treatment. According to Sakalys (2000), the empiricist tradition of medicine in the West, with its accompanying objectivism, reductionism and materialism, effectively narrows medicine's focus down to the body and the physical manifestations of stroke rather than the whole individual who has suffered a stroke. This was seen in the hospital, where patients were more easily described by their particular complaint:

> the left hemiplegia in room 15
> the neglect by the window

These are systems of identification that are endemic to health care institutions in general, where it is all too easy to objectify the person who is the patient and, in so doing, dominate them quite unnecessarily and perhaps detrimentally. Understandably getting to know a person has to start somewhere, and in a hospital, the fact that all the staff knows what is wrong with a patient will of course be very important. But music listening could be helpful in these kind of situations as a counterbalance to this objectification. As mentioned before, talking about the music that the patients had listened to provided a way into a conversation for nurses with the patients who would otherwise find it hard to have a normal conversation due to being seriously ill (Laitinen, 2008). So music listening as a rehabilitative tool could also make it easier for the hospital staff to develop more constructive subjective relationships with the patients. It no longer has to be the case that sometimes, in health care, the particular physical complaint gets more attention than the whole human being, who has a history, interests and dreams for a future of their own.

Observational Techniques

The music therapists in MT-STROKE all mentioned how important and challenging it was to continuously pay attention to each of their clients while simultaneously conducting the sessions. As mentioned earlier, the sorts of things they

were looking out for was each client's motivation; their body language; what motor functions were particularly difficult; any changes in mood; their cognitive performance and the things that clients were able to cope with well, and not so well. Usually patients were motivated, which made therapy easier, but very often they also got quite exhausted in sessions. Observing this in time was very important to ensure that they did not get demotivated and stuck in one particular movement. The music therapist had to watch carefully to ensure that intervention did not come too late.

Another priority for observation among the therapists was each patient's mood, in other words, to be aware of how they might be coping with mood swings, since depression is a very typical symptom among stroke sufferers (Berg et.al. 2003). Some of the therapists suggested that, immediately after a stroke, more attention should be paid to patients' mental well being - in other words, not just the immediate physical effects of stroke, but also their state of mind. Since emotional disturbances and fatigue are frequent after the acute stroke, it is very important to observe these during the music therapy sessions (Ferro, Caeiro & Santo, 2009; Annoni, Staub, Bogousslavsky & Brioschi, 2008).

CONCLUSION

This study has provided information about music therapists' way of working with stroke patients. During the MT-STROKE project, music therapists found their specialist training very helpful, and were also of the opinion that this kind of education should form part of the training for a clinical music therapist, or at least be available to them afterwards, as and when required. They also (as did the therapists from MuKu) valued their interaction with patients very highly, and realized how important it was to be aware of both the mental as well as physical hardships their patients faced after a stroke. In their therapy sessions they observed a great many things at the same time, which was quite challenging and demanding. This study has also shown that there is a special need for multidisciplinary knowledge and multimodal training approaches. It has led the author to the conclusion that music therapy training should consist of different stages, based on the level of competence and the field of expertise required for the clinical work in question. Clinical music therapy training usually covers just the basic competencies, so when working with a specific target group, as stroke patients are, additional training would be needed, followed by extensive clinical supervision.

But perhaps the most original point that the qualitative data in this study raised was that music therapists are in fact in a better position than many think, to know how best to deal with the challenges facing stroke survivors. Their knowledge of neurology and neuropsychology, good interaction skills with patients and capacity of observing both physiological and psychological factors during session suggests that music therapy could be used to improve functional skills in a wider context, and be transferable in some capacity for use outside treatment sessions as well.

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