A qualitative multiple case study with multiple perspectives on what music therapy affords for individuals with severe traumatic brain injury

Nina Wu

Masteroppgave i Musikkterapi

Griegakademiet – Institutt for musikk

UNIVERSITETET I BERGEN

Høsten 2017

Abstract

Traumatic brain injury is known as a complex and comprehensive injury that leaves a devastating blow to the lives of the individuals affected by the traumatic incident both on a personal level and on a global scale. The aim of this thesis is to explore what music therapy can afford for individuals with traumatic brain injury, through conducting a qualitative multiple case study featuring two cases with perspectives from the client's relative, primary nurse and music therapist. The data was collected through semi-structured interviews with the relatives and nurses after they had participated in music therapy, and the session logs written by the music therapist. Through the cross analyzation of the main topics emerging from the three perspectives of each case, the 6 main findings suggest that music therapy affords arousal and motivation, awareness of self, others and environment, meaningful social interactions, improvements in quality of relations, empowerment, and space.

Keywords: music therapy, qualitative research, multiple case study, multiple perspective, severe traumatic brain injury, affordance, appropriation

Acknowledgements

I am beyond elated to present the finished product of my master thesis. My personal journey from studying product design in England, to studying psychology in Oslo, and then finally finding my place in the five-year integrated music therapy program at UiB has been long and challenging. There are several people that I want to show my appreciation for and that have been crucial in helping me get to the finish line.

First and foremost, I owe a big thank you to all the participants of this study, without you this thesis would not have been possible. Also, I want to extend a big thank you to Haukeland University Hospital's department of physical medicine and rehabilitation, the way you warmly welcomed me in to the world of neurorehabilitation and let me be a part of your team made for a great learning experience and fueled my motivation to conduct this study.

To Claire, my super wise supervisor; thank you so much for all your sound advice, encouraging words and for providing all the answers to my questions regarding how to write a thesis, including the questions I did not know I needed answers to. You are a true gem of a professor, the music therapy program at UiB and GAMUT are incredibly lucky to have you as part of their staff and team.

To my mom, my biggest supporter and personal cheerleader; I love and appreciate everything you have done for me, I owe you everything. This thesis would not have been possible to finish without your endless support and love, even if it was a little bit overbearing at times. A big shout out to family and friends who have cheered me on and prayed for me; I am so happy and grateful to have you in my life.

Nina Wu

Bergen, January 2018

Index

1. Introduction

> *The music therapy student plays two more songs, the relative sings along. The student finishes the session with 'You are not alone' by Michael Jackson. After the student sings the last line the patient starts to cough a little, but then smiles widely at the relative."*

This project is a qualitative multiple case study exploring multiple perspectives on what music therapy can afford for individuals with severe traumatic brain injury. There are two cases in total, each case is presented through three different perspectives: the relative, primary nurse and music therapist of each respective individual with severe traumatic brain injury. The extract above is from one of the last session logs of case 2 where the relative of the individual was present. Studying music therapy has had a great impact on how I relate to and interact with other people through music, and this project explores what music therapy can afford for individuals with severe traumatic brain injury and the potential it can have within the field of neurorehabilitation. In the first chapter of this thesis I will present my personal motivation, concepts of music therapy and health, and lastly the purpose and research question.

1.1 Personal motivation

My motivation for conducting this study came from my interest in learning how music affects and stimulates the brain. After learning more about music therapy and neurorehabilitation through a course on music and the brain, I sought to experience firsthand what music therapy could look like and what potential it has in neurorehabilitation. My interest only grew after finishing 90 hours of placement period at a medical rehabilitation center, where I lead individual and group sessions with patients with neurological impairments due to stroke, fall or trauma. During my placement period, I was fortunate to meet the relative of one of the patients I was working with and asked him if he would like to join his son and I in the music therapy session. The father joined us in another session a couple of weeks later. In another music therapy session with another patient I was fortunate to have the patient's spouse, daughter and granddaughter join the music therapy session. Seeing how the presence of family seemed to invigorate and enrich the patients' and their relatives' experience of music

therapy, I decided that it would be vital for this study to include the patient's family member or significant other in the music therapy sessions.

Originally, the purpose of this project was to replicate a study conducted by Berit Vik, Geir Olve Skeie and Karsten Specht in 2016, where they gave piano lessons to ex-patients who had experienced a mild to moderate traumatic brain injury and collecting data through semi-structured interviews and neuro imaging. The idea was to replace the piano lessons with music therapy sessions instead. I was encouraged by one of my professors to ask myself this question: can the quality of the participant's experience in music therapy be measured? I then decided to move away from a quantitative, neuroscientific approach, towards a qualitative research approach, using a qualitative multiple case study design to explore multiple perspectives on what music therapy can contribute to working with individuals with severe traumatic brain injury within a medical rehabilitation setting.

1.2 Traumatic brain injury

In 2006, World Health Organization (WHO) published a book on neurological disorders that are public health challenges we face across the globe. WHO states that "traumatic brain injury is the leading cause of death and disability in children and young adults around the world" (Who & World Health, 2006, p. 164). Most deaths happen within the first few hours after injury, and head injury amounts for the death of up to 50% of the trauma victims (Sollid & Ingebrigtsen, 2012). According to WHO, road traffic accidents, the main cause of traumatic brain injury, will by 2020 surpass many other diseases and take third place in the world ranking burden of disease and second place as the leading cause of death in developing countries.

Traumatic brain injury (TBI) is defined as an injury to the head caused by an external force, resulting in damage to living brain tissue that leads to alterations in brain function (BIAA, 2015; CDC, 2017). TBI is usually characterized by a subsequent period of altered consciousness due to coma or amnesia that can be as short as a couple of minutes or last for months or indefinitely. Damages to the brain tissue can lead to sudden and sometimes permanent changes to the individual's physical, mental and psychosocial abilities (CDC, 2017).

There are three levels that describe the severity of the injury: mild, moderate and severe traumatic brain injury. A severe TBI appears on the Glasgow Coma Scale from 3 to 8, and is defined as a brain injury resulting in a loss of consciousness for more than 6 hours (Åstrand & Romner, 2012). Moderate to severe brain injury can include impairment to cognitive skills such as memory, attention, concentration, confusion, impulsiveness, as well as damages to speech and language, sensory and perceptual abilities. It can lead to physical change, such as paralysis, chronic pain, seizures, sleep disorders, fatigue, as well as social and emotional change in behavior, lack of motivation, irritability, aggression and depression (Zasler, Katz, & Zafonte, 2007).

Furthermore, the enormous economic costs of treatment and rehabilitation poses a great threat for the individuals, the families and the society, all whom are affected directly or indirectly by the injury. Using data from 2000, Finkelstein et al. estimates the annual cost of TBI to be around 60,43 billion US dollars (Finkelstein, 2006), where they estimated that the direct cost (medical treatments and hospitalization) makes up for 9,22 billion US dollars of the 60,43 billion, and the estimated productivity costs (lost wages and benefits due to injury) shockingly make up 51,21 billion US dollars. Thus making the productivity losses associated with TBI much higher than any other injured body part (Finkelstein, 2006).

The social consequences for an individual with TBI are many and very serious. According to the National Institute of Health's (NIH) consensus development conference on rehabilitation of persons with TBI, it can lead to increased risk of "suicide, divorce, chronic unemployment, economic strain, and substance abuse" (NIH, 1999b, p. 976). Overall, the resulting change following a tragic event such as TBI causes disruptions in relationships dynamics and family functioning, in some cases permanently, which can worsen over time. Family members of the injured have reported cases of depression, social isolation and anger (NIH, 1999b, p. 977). Furthermore, TBI is reported to lead to social skill deficits that are important reasons for "unemployment, social isolation, lack of intimate relationships, and family stress" (NIH, 1999a, p. 26)

1.3 Music therapy & health

Research within the field of music therapy continues to show a strong correlation between music and health (Bonde, 2011; Bonde, Ruud, Skånland, & Trondalen, 2013; Ruud, 1997, 2011, 2013a, 2013b). Coming from a humanistic perspective, Ruud sought to move away

from the medical notion of placing the client in a "sick role" indicating that this person needed an expert to help cure a disease or sickness. Influenced by the holistic theory of health, where one views health as a feeling of well-being and a capacity for action (Nordenfelt 1991), Ruud defines music therapy as "an effort to increase possibilities of action" (Ruud, 1997, p. 88). With this perspective in mind, a state of unhealth would be when one lacks abilities of action, meaning that the person would not be able to realize his or her individual goals. Nordenfelt argues that health and illness are two different things, having an illness might induce suffering, but if that suffering does not stand in the way of that person's vital goals in life, that person would still have some degree of health. Meaning that the person still has possibilities for action.

In Bruscia's book on *Defining music therapy* (2013), he proposes a working definition of music therapy that describes music therapy as "a reflexive process wherein the therapist helps the client optimize the client's health, using various facets of music experience and the relationships formed through them as the impetus for change" (Bruscia, 2013, p. 36). With this definition, Bruscia is referring to the professional practice of the discipline based on music therapy theory and research. In using *optimize* instead of to 'improve or promote', Bruscia states that the focus in music therapy should be to "work towards maximizing the unique potentials of each individual" (Bruscia, 2013, p. 97).

1.4 Towards a resource-oriented approach

The resource-oriented perspective in music therapy builds further upon Ruud's concept of health and using music therapy as a means of health promotion. Resource-oriented approaches in music therapy focuses on enabling the client to help themselves through gaining understanding of how they can utilize their resources to promote health in their own everyday life (Rolvsjord, 2005; 2010; 2016; Schwabe, 2005). Rolvsjord states that a person's resources can be more than personal strengths or talents, it can also include 'objects' that the person can use in their effort towards promoting health (Rolvsjord, 2016, p. 561). Schwabe offers another take on the definition of resources, stating that resources can be understood as the opportunity spaces where the client utilizes his or her potentials to satisfy their basic needs (Schwabe, 2005). Although Schwabe and Rolvsjord have formulated different definitions on what the aim and focus of resource-oriented approach looks like in music therapy, there are several aspects of their definitions that are similar and will be presented in the literature review.

1.5 Music therapy and TBI in Norway

In recent years, there has been an ongoing debate in the health region of Easter Norway concerning how the management of patients with TBI could be improved (Hadzic-Andelic & UiO, 2010). The debate never moves any further than mere speculation as there seems to be a shortage of population-based studies of the TBI epidemiology in Norway. Likewise, the lack of research on music therapy and TBI in Norway creates a significant hole in

Skeie et al. conducted in 2010 a study on patients with aphasia and dysarthria in the acute phase after a stroke. The study recruited 19 in-patients (16 with aphasia, 3 with dysarthria), with no record of any formal music training, who were examined on their ability to sing/recite the text of both familiar and unfamiliar songs. Results showed that twelve of the patients improved their word production by singing the familiar songs, and five of them showed improvements in reciting the unfamiliar song (Skeie, Einbu, & Aarli, 2010). Surprisingly, improvements in word production were not dependent on the musical quality of the song, the researchers stating that "the intention to sing apparently released the improved word production" (Skeie et al., 2010).

Berit Vik conducted a study on instrument supported intervention with 7 patients with mild to moderate TBI, who had previously undergone rehabilitation at Nordås Rehabilitation Center and were still experiencing some cognitive deficits in attention, work memory and fatigue. The study reported to yield positive results, with decreases in headaches, less experience of fatigue and improved endurance (Vik, 2017; Vik, Skeie, & Specht, In Press).

1.6 Research purpose

In a book chapter titled *Community music therapy: culture, care and welfare* Stige (2004) describes affordance as a relational concept. "It describes what someone or something offers in relation to someone or something else. The affordance is therefore in the relationship not in the 'thing itself'." (Stige, 2004, p. 106). Regarding this relational concept of the word *affordance* or *to afford*, the purpose of this thesis is to explore what music therapy can afford for individuals with severe traumatic brain injury. The term affordance will be elaborated upon further in the literature review.

1.7 Thesis outline

The thesis is divided into 5 chapters, where the first chapter is the introduction and states the purpose of the thesis, topic and background. Chapter 2 presents a literature review on relevant topics and theories. Chapter 3 is the methods chapter, where I present methods of the study. In chapter 4, I present the findings from the data analysis before I start discussing these findings and implications for future research in chapter 5.

2. Literature review

In this chapter I begin with presenting literature on music and the brain to give more insight into how music affects the brain and what therapeutic implications it can have for music therapy. Next, I will present literature on neuroplasticity and neurorehabilitation to better understand how the brain works and adapts to learning, new experiences and impairments due to trauma or illness. Then I present the literature I found on traumatic brain injury and music therapy, music therapy and family, TBI and family, and TBI and quality of life. Lastly, I will present literature on concepts of health, quality of life, resource-oriented perspectives and affordance within music therapy literature. The literature in

2.1 Music and the brain

Over two decades of research on how music affects the brain has revealed that there are two main findings that stands out as being vital for the use of music in neurorehabilitation (Thaut & McIntosh, 2010). The first finding revealed that music listening stimulates and activates brain areas that also process other comprehensive functions such as auditory perception and language (Patel, 2003), working memory, attention, semantic processing, and motor imagery (Janata, Tillmann, & Bharucha, 2002), and executive control and motor control (Bengtsson et al., 2009). Thaut and McIntosh writes that music has proven to be efficient in accessing and activating these systems, and can stimulate complex interaction patterns among them (2010). The therapeutic implications of these findings are that music can access many of these processes at the same time and train these processes to become even more efficient in processing information across different structures of the brain and the two brain hemispheres. If some of these functions were damaged through a neurological disease or impairments due to injury, music can prove to be efficient in regaining some of the functions through accessing brain structures with similar functions. The second finding revealed that music learning can change parts of the structures of the brain. Research on music learning has demonstrated an increase in the size of brain areas that control auditory and motor functions, as well as increase the efficiency of interactions between them (Thaut & McIntosh, 2010). The implications of this second finding indicate that music can increase interaction, the efficiency of the interaction and the quality of the connection between the two hemispheres. Meaning that if one part of the brain were severely damaged due to a trauma or injury, the other part could still be enlisted to regain some of the functions that were lost in the other hemisphere.

According to Schlaug (2015), playing music instruments require "a strong coupling of perception and action mediated by sensory, motor, and multimodal integration regions distributed throughout the brain" (Schlaug, 2015, p. 33). The brains of musicians serve as exemplary models for studying brain plasticity due to its unique ability to stimulate and generate a strong connection between the brain regions responsible for perception, sensory and motor functions. Studies on the differences of brain structures between the brains of musicians and nonmusicians have reported the existence of larger anterior corpus callosum in musicians than nonmusicians (Hyde et al., 2009; Ozturk & Kurtoglu, 2002; Schlaug, Jäncke, Huang, Staiger, & Steinmetz, 1995). Furthermore, Schlaug et al. (1995) reported a significant difference between musicians who started musical training at an early age (before seven) and those who began their training later, with corresponding neuroimages demonstrating a larger size of corpus callosum in the brains of the musicians who started their training early (Schlaug et al., 1995).

The use of music in neurorehabilitation started with studies on movement and shared mechanisms between musical and non-musical functions in motor control, where they found rhythm and timing to be the most important shared functions (Thaut & McIntosh, 2010). Based on these findings, Thaut and McIntosh suggest that music can be a driving force behind the reconstructing and relearning of cognitive, motor, speech and language functions through shared brain systems and neuroplasticity. "Once used only as a supplementary stimulation to facilitate treatment, music could now be investigated as a potential element of active learning and training." (Thaut & McIntosh, 2010, p. 4).

Thaut and McIntosh hypothesized that using musical rhythms as timing signals might improve individuals with Parkinson's motor control during non-musical movement. To test this, they used rhythmic auditory cues to help the individuals synchronize their walking. The results confirmed their hypothesis that music can help shape movements in therapy by "assessing shared elements of musical and non-musical motor control (rhythm, timing) and thus powerfully enhance relearning and retraining in a clinical environment" (Thaut & McIntosh, 2010, p. 5).

For the past 10 years, research on music within neurorehabilitation has started to shift from the use of music in motor therapy, to rehabilitation of speech, language, and cognitive functions (Thaut & McIntosh, 2010). Thaut and McIntosh writes that music has the ability to activate brain structures bilaterally or more in the right hemisphere than the left. This ability is important for injuries on one side of the brain, such as aphasia, that results from damages to

the Broca's area which lies primarily in the left hemisphere. Singing relies heavily on right hemisphere brain structures, thus providing people with aphasia a way of speech production by bypassing the damaged speech centers in the left-hemisphere (Thaut & McIntosh, 2010 p. 6). Music is also shown to help improve working memory by activating temporal and frontal brain areas on both sides of the brain, as well as increase attention span by activating the attention network on both sides of the brain (Thaut & McIntosh, 2010).

Recent biomedical research in music has led to the formation of a new scientific model, known as neurologic music therapy. Neurologic music therapy focuses on the development of standard clinical techniques supported by scientific evidence on the therapeutic application of music to cognitive, sensory, and motor dysfunctions caused by injuries or diseases to the nervous system, and is based on neuroscientific models of music perception and how music can change non-musical brain functions and behavior (Thaut & McIntosh, 2010, p. 9). Although 'music therapy' is in the name of this scientific model, it is only recognized within the fields of neurology and brain sciences as a model based on and used in scientific and clinical research directed towards non-musical therapeutic goals.

2.2 Neuroplasticity & neurorehabilitation

Up until the 1960's it was a common belief in the field of neurology that aside from removing occasional hematomas (collection of blood outside of blood vessels) or elevating depressed skull fractures (when fractures of the bones are pushed in), not much could be done to influence the outcome after a head injury (Åstrand & Romner, 2012). For the past several years research within the neuroscientific field as begun to characterize and explore the brain's ability to adapt structurally and functionally due to new learning experiences, or a disease or injury that has led to impairments in the brain (Kleim, 2011). This ability is known as brain plasticity, or neuroplasticity, and has revealed the brain's capability to reorganize neural circuits through strengthening synapses and pruning, and it's remarkable trait to be able to train intact brain regions to regain some of the functions of impaired regions caused by the illness or injury (Kleim, 2011). The last part is also known as cortical remapping, which refers to how sensory and motor functions are mapped somatotopically onto different brain regions, creating cortical maps or organizations that change in response to experience, development and injury, even in adults (Wittenberg, 2010). Wittenberg continues to write that after a stroke "the spared areas of the main cortical map for movement appears to participate in representing

affected body parts, expanding representation in an experience dependent manner" (Wittenberg, 2010, p. 252). This is a trait that occurs in animals and humans alike. Neural plasticity can be defined as "a) the capacity for neurons to structurally and functionally adapt, b) the genesis of new neurons during development, c) the ability to recover from brain injury, and d) changes in behavior observed during learning." (Kleim, 2011, p. 527).

In his manuscript on neuroplasticity and neurorehabilitation, Kleim (2011) describes neurorehabilitation as a learning process, where there is a clear distinction between learning in the intact brain, and learning in the damaged parts of the brain. According to Kleim, there are two ways in which functional improvement can happen in the damaged brain: through recovery and compensation. From a neuroscientific standpoint, one can argue that there could never be a true recovery because once neural tissue is gone it cannot be returned, thus compensation is the only way to gain functional improvement. From a neurorehabilitation therapist's point of view, one can argue that functional improvements represent recovery when the patient can perform tasks they could not perform immediately after the injury. Neural recovery and/or compensation can be achieved through neural strategies that include restoration, recruitment and retraining. Restoration refers to re-engaging residual brain areas post injury, where the neurobiological changes following the injury has caused dysfunction in the areas that are still structurally intact. Recruitment includes enlisting residual brain areas involved in motor function that have the capacity to provide motor function that was lost post injury, but where not making significant contributions to this task prior to the injury. Retraining refers to training residual brain areas to either adapt and support existing functions or undertake supplementary functions to perform new functions (Kleim, 2011, p. 524-525).

2.3 Rehabilitation

A treatment is something given to a patient, where the medical staff is the expert on how to help the patient get better. In contrast to this, Wilson (1999) describes rehabilitation as a two way process where the patient together with the professional staff work towards enabling the patient to achieve an "optimum level of physical, social, psychosocial, and vocational functioning" (Wilson, 1999, p. 13). Wilson goes on to emphasize the importance of the patient taking an active part in their own rehabilitation process, where the end goal is to allow the person to function as well as possible in their own environment. Rehabilitation is then understood as the combined efforts of both the patient and the professional staff to develop

activities regarding the patient's needs, wishes and environmental context (Edwards & Gilbertson, 2016, p. 367).

2.4 Music therapy and traumatic brain injury

In 1994 Aldridge performed a literature review on the application of music therapy in medical and rehabilitation settings. In working with individuals with aphasia (loss of speech/speech impairment), often a result of brain damage due to head trauma, studies showed that music therapy plays a vital role in speech rehabilitation. Singing familiar songs was reported to show positive effects on articulation and fluency, motivating the patients to communicate and promoting intentional verbal behavior (Aldridge, 1994). Aldridge concluded that the results of his observations points out a critical feature of music therapy research, although "well intentioned, and often rigorous work, is spoiled by a lack of research methodology" (Aldridge, 1994, p. 2010). Aldridge states that this does not mean that all clinical research in music therapy should adhere to one methodology, or even in the field of medical research, but rather that there is a need to develop standard research tools and methods of clinical assessment "which can be replicated, which are appropriate to music therapy itself, and develop a link with other forms of clinical practice" (Aldridge, 1994, p. 210).

Paul and Ramsey (2000) reviewed literature on use of music and physical therapy in fields of neurorehabilitation, orthopedics and pediatrics. Studies showed that using music therapy to assist physical recovery can lead to many benefits, such as increasing consistency of patient participation in exercises and activities, easing discomfort, creating a more positive attitude towards challenging exercises/activities in therapy and contributing to the patient's quality of life. Combining music therapy goals with physiotherapy and occupational therapy goals could show positive changes to strength, range of motion, balance, communication and cognition (Paul & Ramsey, 2000).

Gilbertson performed a literature review on music therapy with individuals with TBI in neurorehabilitation in 2005. His literature search resulted in 54 texts related to using music therapy with individuals who had experienced TBI. Central topics and focuses within these studies where the importance of using music therapy to facilitate perception and awareness of the individual's surroundings (orientation) and memory, to promote improvements to speech and language, to provide ways of emotional expression, and to facilitate change in mood (Gilbertson, 2005). Other topics explored in music therapy literature related to the motivation

and self-esteem of individuals with TBI, and showed that music therapy increased their level of involvement in rehabilitation, helped them to become more functional independent, and assisted in redeveloping their self-identity (Gilbertson, 2005).

One of the studies in Gilbertson's literature review (2005) explored the difference of using lived, taped or no music with individuals going through posttraumatic amnesia. The results show that both live and taped music are effective in enhancing orientation and reducing agitation among the participants (Baker, 2001). The participants reported to prefer listening to live music, and the results reflected this preference as the participants were able to better recall the presentation of live music rather than recorded music. However, Baker states that there are several advantages to both live and taped music, the latter being that "taped music is the easier mode to administer and hospital staff could be trained to implement the programs at appropriate times when the music therapist may be unavailable" (Baker, 2001, p. 188).

Only one of the studies mentioned in the Gilbertson's review reported to having involved family members to help determine the effectiveness of music therapy through measuring changes in mood and involvement of the individuals with TBI (Gilbertson, 2005). The researchers recruited the individual's family members to rate changes in the individual's involvement, motivation, mood and social interaction (Nayak, Wheeler, Shiflett, & Agostinelli, 2000).

Towards the end of Gilbertson's literature review, he summarizes the core aspects of music therapy within the process of rehabilitation following a traumatic brain injury into 15 statements. In the last one he suggests that "music therapy may offer a relevant and appropriate therapeutic resource in the future for family members of people with traumatic brain injury" (Gilbertson, 2005, p. 138). His suggestion for future investigation is based on the notion that the dramatic nature and severity of TBI causes serious trauma in various forms for the family members and relatives of the injured person. A notion that was presented through the NIH conference consensus on rehabilitation of people with TBI (1999b).

In a chapter on *Music therapy and traumatic brain injury* (2016), Gilbertson suggests considering a new terminology for traumatic brain injury. Based on Clark's statements on the importance of viewing the brain as a social brain, socially structured through our interactions with and our perception of other people and our environment (Clark, 1998, 2011), Gilbertson provides a rational for considering TBI as a relational trauma. He suggests that the 'old' term, traumatic brain injury, should be redefined as: "a traumatic social nervous system injury".

With this idea of regarding TBI as a traumatic social nervous system injury, Gilbertson remarks that one aspect for future music therapy research should be a family perspective as "many adult patients are parents of children of all ages, and music therapy may offer yet unexplored possibilities for the rehabilitation of parents within a relational rehabilitative perspective for families" (Edwards & Gilbertson, 2016, p. 5). However, Gilbertson reports that there have been no studies conducted where the individuals with TBI have been joined by the relative in the music therapy sessions.

2.5 Music therapy and family

Flower and Oldfield published in 2008, a book titled *Music therapy with children and their families* (2008) that depicts a range of narratives from music therapist that have dedicated themselves to work with children and their families in different fields of music therapy practice. In the book's introduction by Kay Sobey, she comments on how it came as a surprise that Oldfield and Flower's book is the first publication that focuses entirely on working with families in music therapy: "With a belated flowering of music therapy publications in the last decade it is perhaps surprising that this is the first to concentrate entirely on working directly with families" (Flower & Oldfield, 2008, p. 11). The book reports music therapist working with and supporting parents and families with children with learning disabilities and vulnerable children in the practice of child development care, traumatized children and children with other mental health care issues in psychiatric hospitals, and children near end of life.

In a recent book on *Music therapy with families: therapeutic approaches and theoretical perspectives*, Jacobsen et al. (Jacobsen et al., 2016) gives us perspectives and models of music therapy in working children and their families in different clinical areas such as psychiatric or pediatric hospitals, families with children with Autism Spectrum Disorder, and families in palliative care (Jacobsen et al., 2016). In the last chapter of the book, the authors reflect upon the similarities and key characteristics across the perspectives of 14 contributing authors working in ten different specialist areas. One of the key theories that the authors highlight are the tendency to integrate both resource-oriented and family-centered theories by focusing on essential elements such as adapting to the individual needs of the family, through empowering, supporting and helping the parents and other family members to cope with their situation and improve their ability to balance daily demands (Jacobsen et al., 2016). This

family-centered and resource-oriented approach falls in line with music therapist who work with supporting the parent/caregivers' self-efficacy and coping abilities with a focus on empowerment. One of the contributors of the book even argues that family-centered practice in music therapy can be linked to the fundamental qualities of community music therapy due to the emphasis on the community of the family, and the focus on accessing and building family resources that the family can utilize in meeting their health-related goals.

2.6 Traumatic brain injury and family

In 1998, the National Health Institute held a consensus conference on Rehabilitation of persons with TBI. Studies that focuses on the consequences of TBI for the family, presented at the NIH conference, show that many family members report feeling overwhelmed and ill-equipped for the long-term needs of the person with TBI, despite the interdisciplinary team's best efforts to educate and prepare them after hospital discharge. One of the studies found that families were most affected by the adverse impact on communication and unrequited emotional support (Kreutser, 1994).

Since 1972, research on family members has focused on four primary areas: "1) family members' coping and psychological well-being, 2) family members' needs, 3) family functioning, and 4) changes in relationship status" (NIH, 1999a). At the end of the conference, the consensus panel concluded that there were 30 areas of research that needed further assessment to guide and improve the rehabilitation of people with TBI. Among the 30 topics the panel presented, only 3 of them mentioned the need for further research involving the family, significant others and the community of the individuals with TBI (NIH, 1999b).

> *20. The predictors of quality of life for persons with TBI, their families, and significant others should be studied.*
>
> *27. The effectiveness of community-based rehabilitation for persons with TBI should be studied.*
>
> *29. The effectiveness of peer support for persons with TBI, their families, and significant others should be studied.* (NIH, 1999b, p. 980).

In 2006, Gordon et al. reviewed studies on how TBI impacted the life of the injured person's caregivers and family members, revealing common factors such as stress, depression, anxiety, poor communication and lack of personal time (Gordon et al., 2006). The authors note that

there is still a substantial lack of literature on interventions for and including the caregivers and family members of people with TBI.

2.7 TBI and quality of life

For the past years, measurement of quality of life has become a popular instrument in measuring the functional outcomes in persons with disabilities. In the case of TBI there are many indicators to consider while determining the quality of life following such a tragic and comprehensive injury, not only the changes that appear right away, but also the various ranges of physical, cognitive and behavioral sequelae (NIH, 1999b).

Due to the severity of most cases with moderate to severe TBI, the assessment of the functional outcome of this particular group is often based on ratings from staff or family, rather than data derived directly from the injured person. In the past, researchers have made assumptions that persons with cognitive impairments, due to their physical and mental conditions, might be inaccurate in rating their own behavior (NIH, 1999a, p. 43). Sander and colleagues conducted a study in 1997 that showed that individuals with TBI and their families had high levels of accordance in ratings on the Community Integration Questionnaire (CIQ) and other measures of post-acute functioning (Sander et al., 1997).

After conducting a literature review on recent empirical studies on rehabilitation of TBI, several years following NIH's conference on the Rehabilitation of people with TBI, Ragnarsson (2006) found that there is still a need for valid and reliable quality of life assessment instruments for TBI.

2.8 Music therapy for health promotion & Quality of life

Ruud's view on music therapy and health promotion comes from a humanistic perspective which has influenced his definition of music therapy as a way of increasing opportunities and possibilities for action (Ruud, 1997, 2006, 2011). Ruud regards health as the possibility to realize vital goals in life, a perspective that is closely related to Maslow's humanistic theory on hierarchy of needs. Maslow's theory suggests that human beings are driven by a hierarchy of needs, at the bottom we find our 1) physiological needs like water, food and shelter that we need in order to survive; 2) next, we have our need of sense of security, of being safe; 3) after that we have our need of belonging, and 4) our need of approval of others, to be appreciated

and respected. Once all of these 4 categories of needs are met, the person can fulfill his/her need for the fifth stage which is self-actualization (Maslow & Lewis, 1987).

Furthermore, Ruud's concept of health and quality of life is linked to Antonovsky's salutogenic orientation, where health is seen as the resources of resistance against a disease. According to Antonovsky there are three main resources we may use to mobilize against or prevent disease: when life is felt comprehensible and predictable, when we experience life as manageable and meaningful, and lastly when we experience a sense of coherency. Antonovsky argues that this feeling of coherency is vital for our resistance to disease (Antonovsky, 1991).

Ruud writes that there are four ways to perceive health, health can be perceived as a condition, as a resource, an experience or as a process (Ruud, 2006). As a condition, health and illness are regarded as opposites, you either have health or you have an illness. Both conditions cannot exist at the same time. When health is perceived as a resource, it is regarded as a means to achieve a set goal. In this case, health is a strength one uses to prevent illness, or contribute to getting well sooner. When one views health as a process, health becomes something one creates and develops through a continuous process. It is always interchangeable, and can be influenced and affected in different directions. If you perceive health as an experience, 'good health' would indicate experiencing contentedness, happiness and meaning of life.

In recent decades, Ruud writes that quality of life has been more and more accepted as a standard way of measuring health: "It has been both nationally and internationally, during the past decades, an accepted goal within patient treatment to achieve quality of life in the best possible way" (Ruud, 2006, p. 18, English translation). Further on, Ruud states that all these perspectives and orientations towards understanding health and promoting health reveals and expresses our own cultural perception of what well-being and quality of life means to us (Ruud, 2006, pp. 22-23).

Quality of life is a term used frequently in literature within philosophy, social sciences, economics, psychology, health and medicine. Rapley states that according to all these different fields of study and professions quality of life is about:

> "Happiness; life-satisfaction; well-being; self-actualization; freedom from want; objective functioning; 'a state of complete physical, mental and social well-being', 'Not merely an absence of disease'; balance, equilibrium or 'true bliss'; prosperity;

> fulfilment; low unemployment; psychological well-being; high GDP; the good life; enjoyment; democratic liberalism; a full and meaningful existence" (Rapley, 2003, p. 27)

This citation posits quality of life to be a multidimensional concept that covers several aspects of human life, such as physiological, psychological, material, social and emotional well-being (Cella, 1994; Felce, 1995). Some would argue that quality of life is mainly a subjective phenomenon, varying from person to person (Cella, 1994). Others may argue that one needs to perceive it from a social point of view, that personal opinions, values and life goals are dependent on cultural factors such as country of origin, living standards, education, and politics (Rapley, 2003). The overall understanding that both sides can agree upon is the difficulty of measuring something so multidimensional and complex. It depends on both cultural/social factors as well as individual indicators, which makes it difficult to standardize a test that can be used for all people no matter where they come from or what kind of background they have.

In an attempt at studying how long and happily people live, 'happiness expert' Veenhoven discovered two things: 1) the highest measurement of quality of life are found in countries characterized by economical affluence, freedom and equity; 2) the size of one's salary and the generosity of government insurance are not conditional for living a happy life (Veenhoven, 2005).

Health and quality of life are both complex concepts that are difficult to define and can be difficult to measure due to both individual and cultural/social indicators. However, there is a universal understanding that both terms focus on achieving the same goal: to promote physical, psychological, social and emotional well-being (Ruud, 2006). Using this rationale, Ruud argues that they even might be one and the same.

> "I have become aware of how 'quality of life' refers to a subjective state of 'meaning', 'wellbeing' or happiness, rather than an objective set of criteria which must be fulfilled in order to obtain a certain level of quality of life" (Ruud, 1997, p. 90).

Continuing on, Ruud states how quality of life can be linked to how music therapy can provide a strong, flexible and differentiated identity and should be regarded as "a potential resource in the performance of quality of life" (Ruud, 1997, p. 91).

Inspired by other Scandinavian writers like Siri Næss (2001) and Tone Rustøen (1991) on their concepts of quality of life, Ruud states that there are four important aspects of quality of life that needs to be met in order to experience a subjective state of 'meaningful existence' or 'happiness'. These aspects are: 1) awareness of feelings, 2) sense of agency, 3) sense of belonging and 4) experiencing meaning and coherence (Ruud 1997).

Ruud comments on how all these aspects of quality of life are related to the individual's sense of self and identity, and claims that music therapy contributes to an increased sense of self and reaffirms identity, which is an important step towards promoting health and quality of life. Ruud's theoretical concepts of music therapy as a health resource that promotes health and quality of life, are one of many theoretical conceptualizations in music therapy research that helped influence the resource-oriented perspective in music therapy (Rolvsjord, 2016).

2.9 Resource-oriented approach in music therapy

The resource-oriented perspective in music therapy was introduced in the field of music therapy through the works of Christoph Schwabe (2005) and Randi Rolvsjord (2005; 2010; 2016). Although their works were developed separately, their thinking was rather consistent in the idea of focusing on the client's strengths and resources rather than limitations, and enabling the client to be an active agent in his or her process towards promoting health.

Resources in psychotherapeutic thinking can be understood as the sum of all aspects of processes and the whole life context of a person such as: "motivational readiness, taste, attitude, knowledge, education, abilities, habits, interaction styles, physical characteristics such as appearance, strength, perseverance, financial situation and social relations." (Grawe & Grawe-Gerber, 1999, pp. 66-67). Continuing, Grawe and Grawe-Gerber states that these aspects represents what they call 'opportunity space', where individuals can utilize their strengths and potentials to satisfy their basic needs (1999). Resources can therefore be understood as the opportunity spaces for utilizing potentials to satisfy basic needs. Resource-oriented action approaches in psychotherapy focuses on the re-discovery and reactivation of the opportunity spaces or resources of a person (Schwabe, 2005).

Based on the understanding of resources as opportunity spaces and the resource-oriented action approach in psychotherapy, Schwabe views music therapy as a resource-oriented psychotherapy. According to Schwabe, a resource-oriented activation approach in music

therapy emphasizes the importance of not viewing the patients as passive consumers receiving a treatment, but rather as active partners, taking charge and involving themselves in the music and their own process of promoting health.

> "Above all, the most important aspect in this concept is the activity of the patients. They are not reduced to passive consumers of effectance-oriented treatments, but they are active partners in the therapy process." (Schwabe, 2005, p. 52)

Schwabe points out three main aspects of resource-oriented activation approach in music therapy. First, the resource-oriented approach is characterized by the focus on releasing self-healing forces in the patient, this is done through the process of understanding and accessing the person's personality. To mobilize self-healing forces in a patient also means enabling the patient to connect to their surrounding reality, which characterizes the second main aspect of a resource-oriented approach. Schwabe describes this process as a healthy way of enabling a person to distance themselves from "burdening and difficult internal processes – without repressing them" (2005, p. 50) and focus on dealing with their surrounding reality instead. The third aspect concerns the therapist's attitude towards regarding the patient as a human being, with both strengths and limitations, and choosing to focus on their potentials rather than deficits (Schwabe 2005, p. 50).

In order to understand and recognize resource-oriented approaches in music therapy, Schwabe points out the importance of understanding of music as both an object and an action. With music as an object, Schwabe refers to how music can be the "active focus of attention and confrontation based on diagnostic- and indication-specific therapeutic intentions" (Schwabe, 2005, p.52). When music is understood as an action it becomes "an action medium, which initiates – beyond the music being produces – extramusical processes, which are possibly connected to very important experiences." (Schwabe, 2005, p.52). With the understanding of music as both object and action, Schwabe implies that interacting with music has both physical and psychological effects. Schwabe's view on music as both object and action is similar to the musicological term of musicking (Small, 1998), and the theoretical concept of health musicking (Bonde, 2011).

Prompted by her own experience and clinical practice with clients with mental health issues, Rolvsjord saw the need to elaborate further on a resource-oriented approach towards music therapy in the field of mental health care (Rolvsjord, 2004; Rolvsjord, 2010; Rolvsjord, Gold, & Stige, 2005). Rolvsjord draws on many different theoretical perspectives that emphasize

and promotes resource-orientation to form her resource-oriented approach, including perspectives and concepts from positive psychology, the empowerment philosophy, common factors approach and current musicology (Rolvsjord, 2010, 2016).

Perspectives in positive psychology draws on the emphasis of the theoretical concept of positive health, which accentuates and recognizes positive emotions and positive experiences as important parts of the therapeutic process (Snyder, 2002). Perspectives in empowerment philosophy deal with the interaction and interdependency between the individual and his/her community, through emphasis on enablement, participation and control (Dalton, 2001). The common factors approach is concerned with the multiple factors, with emphasis on client factors and the therapeutic relationship that makes psychotherapy work (Duncan, Wampold, & Hubble, 2010). Finally, Rolvsjord connects the theoretical frames of resource-oriented music therapy to the perspectives on current musicology that point towards understanding how music is culturally dependent, what music affords, and how it is appropriated and incorporated into our everyday life (DeNora, 2000).

Rolvsjord, offers four characteristics of resource-oriented music therapy that describes the fundamental attitude and values of the approach: 1) it is characterized by the involvement and nurturing of a client's strengths, resources and potentials; 2) it focuses on equal collaboration rather than an intervention; 3) it sees the individual within his/her context; and 4) it views music as a health resource (Rolvsjord, 2010, p.73). With the 'resources' of a client, Rolvsjord refers to more than just talents or skills, she proposes that the resources of a person can be objects that are accessible and used by the person to promote health in his/her everyday life.

> "The concept of resources implies more than personal strengths or talents, such as musical skills, it also includes 'objects' the individual can access and use in her/his efforts towards promoting health" (Rolvsjord, 2016, p. 561)

The idea of music as a health resource in current music therapy literature is linked to current perspectives in musicology on the use of music in everyday life, and the theoretical concepts of affordance and appropriation (DeNora, 2000). DeNora elaborates on the theoretical concepts of affordance and appropriation in her book titled *Music and everyday life* (2000). Since then, these concepts have been integrated and further investigated in music therapy theory and research (Stige, 2004; Stige & Aarø, 2011; Stige, Ansdell, Elefant, & Pavlicevic, 2013).

2.10 Affordance – a brief history

The term *affordance* is a theoretical concept developed by psychologist James J. Gibson. In his book *The ecological approach to visual perception* (1979), Gibson defines the term affordance as what the environment "offers the animal, what it provides or furnishes, either for good or ill" (1979, p. 127). According to Gibson, the environment can afford many things for an animal or human being alike, it affords shelter, water, fire, objects, tools and terrain. Gibson states that if one can perceive a surface's composition and layout, then one has perceived what a surface can afford. He implies that the values and meanings of things can be directly perceived and depends on the animal's capability of perceiving the environment to understand what it can offer.

In other words, affordances can be described as the possibility of actions offered by the environment to the animal, although what kind of affordance it provides relies on the animal's capabilities of perceiving it. When affordance is conceived of as a relational concept, determined both by the environment and the animal, it indicates the complementarity between the animal and the environment.

> "…an affordance is neither an objective property or a subjective property; or it is both if you like. An affordance cuts across the dichotomy of subjective-objective and helps us to understand its inadequacy. It is both physical and psychical, yet neither. An affordance points to both ways, to the environment and to the observer" (Gibson, 1979, p. 129).

Gibson does not make a distinction between animals and human beings, as he believes that there is no way to distinguish the cultural environment from the natural environment. According to him there is only one world for all animals to live in, although we humans have altered it to suit us better. Although we humans tend to alter our surroundings to better suit our needs, Gibson states that the affordance of something does not change even if our needs change. "The observer may or may not perceive or attend to the affordance, according to his needs, but the affordance, being invariant, is always there to be perceived. An affordance is not bestowed upon an object by a need of an observer and his act of perceiving it. The object offers what it does because it is what it is." (Gibson, 1979, p. 139).

Gibson regards the process of perceiving affordances as an essential part of socialization. Once a child learns to perceive affordances of things for others as well as for himself/herself, which Gibson refers to as common affordance, the child begins to be socialized.

The concept of affordance was later introduced to the field of interaction design by Donald Norman in his book *The psychology of everyday things*, where he describes affordance as "the perceived or actual properties of the thing, primarily those fundamental properties that determine just how the thing could possibly be used" (1988, p. 9). He gives an example of a chair, which affords support, which therefore affords sitting. Norman argues that affordances gives us clues on how to operate things. When affordances are perceived correctly the user knows exactly what to do by just looking at it, no need for labels or instructions. A chair is for sitting, nobs are for turning, slots are for inserting things, buttons are for pushing etc. In contrast to Gibson's theory, Norman believes that affordances are results of the user's mental interpretation of the object based on the person's knowledge and previous experience regardless of whether the affordance exists or not.

The term is later introduced in the field of musicology by Tia DeNora (2000). Based on the notion that perception is culturally provided, DeNora regards affordance, how one perceives and behaves towards an object, as a concept structured by the cultural and social setting. The idea that perception is not only personal (based on an individual's capabilities), but can be culturally provided was brought in by Anderson and Sharrock in their book titled *Can organizations afford knowledge?* (1992). The authors compare their concept of affordance to Gibson's original description.

> *What something is or what it is for can be treated as constituted and re-constituted in and through any projected course or courses of actions given within a setting. In that sense affordance, as we are now discussing it, provides a pointer to the socio-cultural resources we draw upon on such occasions. In other words, it allows us to begin treating perception as an intersubjective, public, socially organized accomplishment rather than a subjective, private, internal process.* (Anderson & Sharrock, 1992, pp. 148-149)

According to Anderson and Sharrock's statement above, the term affordance reveals the socio-cultural resources we draw upon in any given setting. DeNora ties in this way of viewing affordance to the way we perceive and utilize music. When we recognize music as an 'affordance structure' it allows us to understand music as a place or space where one creates meaning and lifeworld making. Lifeworld is a concept developed by philosopher Edmund Husserl and refers to how we make sense of our world through our lived experiences. DeNora claims that music affords many different lifeworld-making activities such as "a workspace for

semiotic activity, a resource for doing, being and naming the aspects of social reality, including the realities of subjectivity and self" (DeNora, 2000, p. 40).

In view of DeNora's statement on what music can afford, one might think that all these processes of meaning making and lifeworld-making comes from the different aspect of music in itself. Instead, DeNora argues that it is not the musical material that affords these opportunities alone, but rather how the agent chooses to apply and interact with them. DeNora ties in the concept of affordances, with a new term: appropriation. By appropriation, DeNora refers to the ways in which "the specific properties of a material (an artefact) are accessed and implicated in some social or social psychological process" (DeNora, 2000, p. 36).

> "The point is that music's power to 'soothe' derives not only from the musical stimulus but from the ways in which Lucy appropriates that music, the things she brings to it, the context in which is set. Lucy did not, for example, listen to this music while scrubbing the kitchen floor, or while working out on an exercise bike." (DeNora, 2000, p. 42)

In this example, music affords a soothing experience for Lucy because of the way she appropriates it (where she chooses to use it and how). Lucy would listen to music by herself in a quiet room, sitting in a rocking chair placed between the speakers, literally nestling herself in the music (DeNora, 2000, p. 42). If we placed another person in Lucy's position between the speakers with the exact same music, then the music would most likely afford a different experience for that person than the one Lucy had.

Influenced by DeNora's theoretical concept of affordance as well as Gibson's original one, Stige (2004) then adapted the term into the field of community music therapy. Stige refers to Gibson's original statement of understanding affordance as a relational concept, and describes affordance as "what someone or something offers in relation to someone or something else. The affordance is therefore in the relationship, not in the 'thing itself'…" (Stige, 2004, p.106). Regarding this statement, the perceived health affordances of music do not derive from the music itself as a standalone object, but rather through how the user relates to the music and incorporates it to their lives based on the context and their previous experience of it.

In other words, it is not the music itself that produces or promotes health, but rather how one relates to music based on context and previous experiences (affordances), and how one chooses to access this relation and apply it according to the contextual and social settings (appropriation) in our everyday life. Music can then be understood as an affordance structure,

and used in music therapy to provide ‘opportunity spaces’ that enables the client to use their own strength and potentials to satisfy their physical, emotional, social and psychosocial needs.

It then becomes increasingly essential for music therapist to learn what music therapy can afford for any client (including individuals with TBI), in appropriation to their social and environmental context, to help them access and improve health resources that they can utilize to promote their own health and quality of life.

3. Methods

In this chapter I will explain my research approach and design, then I will present my standpoint as the researcher of this project as well as the research setting and reflexivity. Next then I will present ethical concerns, the participants, and music therapy intervention. After that I will explain my choice of methods for data collection and data analysis followed by descriptions on how I chose to integrate and merge the data across the two cases of this study.

3.1 Research design

I have chosen to conduct the study within the field of qualitative research. Qualitative research methods are descriptive, where the purpose behind the research is to describe a phenomenon as fully as possible. I chose to use qualitative multiple case study as my research design, as this allowed me to explore two distinct cases of phenomenon interest by gathering information through multiple perspectives and multiple methods. Qualitative case study research, also known as interpretivist case study research, focuses on single cases or units to try to explore a phenomenon within its natural context, using qualitative research methodology and multiple sources of data (Murphy, 2016). Typically, interpretivist case studies are used to answer how and why questions (Yin, 2014, p. 12) where the researcher is interested in insight and discovery rather than to test a hypothesis. In the chapter on *Interpretivist case study research,* Murphy states that interpretivist case studies can be classified in multiple ways, with regard to the orientation, the purpose or the design (Murphy, 2016). There are three identified case study designs within the interpretivist case study approach: intrinsic case designs, instrumental case designs and multiple or collective case designs (Stake, 2005).

I have chosen multiple case study as my research design because I seek to know more about what music therapy can afford for individuals with severe traumatic injury. I have chosen to examine two cases concerning two individuals with severe traumatic brain injury within a medical rehabilitation setting. I chose this design as it best enables me to answer my research purpose: exploring what music therapy affords for individuals with severe TBI. The purpose is descriptive, as I seek to include as many variables as possible in order to create what Murphy calls a thick-rich description of the phenomenon that I am studying (Murphy, 2016).

In this project, the 2 main participants who received music therapy were not able to vocalize their experiences due to the severity of their medical condition. Both participants had what is categorized as severe traumatic brain injury. The participants' primary nurse or relative had to interpret the patient's experience of music therapy. It was up to the relative and primary nurse of the patient, to describe the meaning and significance of the patient's experience of music therapy and their own. In addition to the perspectives of the relatives and the primary nurses provided through semi-structured interviews, I also used my own logs from the music therapy sessions and audiotapes of the sessions to help answer my research question: what can music therapy afford for individuals with severe traumatic brain injury?

3.2 Researcher, research setting and reflexivity

My personal motivation for conducting this study with individuals with severe TBI was my fascination with how music therapy could factor into the field of neurorehabilitation. After taking a course on music and the brain, I chose to write my term paper on music therapy and aphasia. During my final practice placement in my fifth and last year at University of Bergen, I finally gained firsthand experience in working in a medical field. I was placed at Haukeland University Hospital's Rehabilitation center for physical medicine and rehabilitation, in their neurorehabilitation and TBI unit. I held both individual and group sessions with patients who had experienced neurological impairments due to a head injury caused by a stroke, traumatic fall or traffic accident. Being a part of the interdisciplinary team at the Rehabilitation center was an eye-opening experience and gave me a chance to promote music therapy and explore what it could look like in a medical and rehabilitative setting and what kind of impact it could have for those who participated.

In the early stages of developing my project, I considered focusing on individuals with mild traumatic brain injury as the main population. This was soon discarded as I was more interested in exploring what music therapy could bring in a qualitative way, rather than a quantitative way. I was more interested in what music therapy could afford for the individuals in a relational way, what it could offer in relation to others.

From a resource-oriented perspective in music therapy, I sought to develop and stimulate the individuals' strengths and resources rather than to reduce their symptoms or cure their injuries, through focusing on positive experiences, mastery and coping. There are 4 important characteristics of a resource-oriented approach to music therapy: 1) it involves nurturing the

individual's strengths, resources and potentials; 2) viewing the therapeutic process as an equal collaboration rather than an intervention; 3) viewing the individual within their context; and 4) seeing music as a health resource (Rolvsjord, 2010, 2016).

In order to take an ethical approach to the research, I developed thick descriptions of the context through narrative descriptions, focused on examples, and the consulted with research community (Kvale & Brinkmann, 2015, p. 95). The consultation was done through conversations and discussions with my supervisor. This gave me an opportunity to work through my own thoughts and process everything that I experienced, from the process of planning the project, to conducting it and finishing it. Supervision and the process of reflecting over my session logs, helped me see how I could have impacted the research and how the research impacted me. I then used these reflections to inform my process of data analysis and discussion of the findings.

3.3 Ethical concerns

Kvale and Brinkmann state in their book on *The qualitative research interview* (2015) that conducting an interview study is just like conducting a moral study. The human interaction in the interview affects the people being interviewed, and the knowledge that is procured affects our view on the situation (Kvale & Brinkmann, 2015). There are several ethical issues that occurs when one tries to explore someone else's private life and then makes those observations public. These issues arise from the start and follows throughout the different stages of the research.

From the beginning, as the research purpose states, I sought to gain knowledge that can help improve the situation that the participants were in, not just to gain valuable knowledge. I wanted to make sure that this knowledge can help improve others in similar situations. Due to sensitive information and to insure confidentiality, I developed a detailed description of the project, stating the research purpose and possible consequences. I then created a consent form and applied for approval from Norsk Senter for Forskningsdata (NSD). The main ethical concern being that the main participants would most likely be categorized under moderate to severe traumatic brain injury, which would mean that they were in a state where they would not be able to comprehend the conditions of the project and/or give their written consent. Thus, their legal guardians had to consent on their behalf. The consent form is attached as Appendix I, the NSD approval as Appendix II.

Another concern was that these participants would be considered a vulnerable population due to their delicate state of recovery. I had to ensure that precautions were in place to counter or minimize undesired consequences that might occur during the project. Such consequences might include stress, anxiety and/or over-stimulation through participation in music therapy. I needed to assure that the questions asked in the interviews were not too personal or uncomfortable to answer. After I received approval from NSD, I talked to the head physician of the department of neurorehabilitation for stroke and TBI regarding recruitment.

3.4 Participants

There are a total of six participants involved this project. Two patients diagnosed with severe traumatic brain injury, one relative for each respective patient and two primary nurses assigned to each patient. The patients of this project were selected through purposive sampling. Inclusion criteria assured that 1) the patient was diagnosed with severe traumatic brain injury, and 2) could participate in music therapy twice a week for a minimum of 4 weeks. I approached the head physician of the TBI unit, and explained my project to her. She suggested 2 patients that would fit my criteria. Although I didn't request that the participants had to have a background in music, she expressed that the relatives had indicated that both candidates had a connection to music in some way. The relatives of the 2 patients were contacted by the staff and received a letter of information on the project and consent form. Both relatives of both patients read and signed the consent form. I then contacted the primary nurses of both patients, who also agreed to participate in the project. Both case studies of both patients were conducted at the same time.

3.4.1 Martha

Martha is a patient in her late 50's who was brought to the University hospital then transferred to the Rehabilitation center after suffering a severe traumatic brain injury. Due to the severity of her injuries, Martha drifted often in and out of consciousness. She was easily over stimulated, and tired easily. She suffered small muscle spasm and sporadic seizures. When awake, she would make loud repetitive moaning noises, often distressed sounding and varying in volume.

During the first interview with her relative, who was her spouse, he shared that Martha had various music-related hobbies. Martha and her husband shared music interests and would occasionally go to concerts and musicals together. Her husband is her legal guardian and is in his 60's. He was interviewed before the music therapy intervention, to map out Martha's music history and interests. He participated in two music therapy sessions with Martha. One at the very beginning of the intervention and one towards the end. After the last session, he was interviewed again. Martha's primary nurse participated in one music therapy session with Martha and was interviewed afterwards.

3.4.2 Gloriana

Gloriana is a woman also in her late 50's, who was brought to the Rehabilitation center after suffering a severe traumatic brain injury. Gloriana's condition had progressed to the point where she would be mostly conscious during late morning to early afternoon. Although she showed little signs of movement in body and no verbal communication, she was considered well enough to be sitting up in a wheel chair for the music therapy sessions. Gloriana had recently started to receive speech therapy where she trained on swallowing liquids. During the music therapy sessions, she only opened her mouth to cough or to smile.

Gloriana's young adult son also participated in this study and was interviewed before the music therapy intervention, and then once more after participating in two sessions with Gloriana. Her son revealed that Gloriana had been very fond of listening to music and dancing. They would often listen to the radio together after she came home from work. Although the son lived in a different city, he was willing and able to participate in the project. Gloriana's primary nurse participated in one music therapy session and was interviewed afterwards.

3.5 Music therapy intervention

Martha and Gloriana each received music therapy twice a week for a total of four weeks plus one extra session. I started with one session the first week, then I followed the schedule and managed to have two sessions per week for the next four weeks. Martha and Gloriana each received 9 sessions in total. The sessions were held in their private rooms and lasted around 30-45 minutes each. It was a great challenge to find the right time to have the sessions, if the

women had experienced too much activity earlier in the day, they would be too exhausted to be able to participate fully in the music therapy sessions. The prime spot in the day was around 1-2:30pm. Any later than 3 pm, and they would have supper and then sleep for the rest of the afternoon.

In the sessions with Martha the focus was on gaining her attention, through prolonging her attention span and her focus. I worked on helping her to gain consciousness of her own voice. I was unsure if she was making her loud repetitive moaning sounds consciously or if it was an involuntary action caused by her brain injury. We worked on her gaining voluntary voice control through singing together. I would start to sing in a pitch that matched her moaning sounds, matching her tempo and the frequency of the sounds. I would then start to sing a simple melody, in the same pitch, like a children's song or a song based on her music preferences. Sometimes I accompanied softly on guitar to support what we were singing, other times I used a kalimba or only my voice. If she fell asleep I would continue to play softly on guitar, while humming, creating a relaxing atmosphere. Sometimes she would wake up and we would resume singing together, often on the song we were doing before she fell asleep, other times I let her sleep and left the room.

In the sessions with Gloriana I focused on reaching out and trying to connect with her through music listening. I was informed through her son that it was an activity she enjoyed doing before the injury occurred. I sang and played songs based on her music preferences, focusing on her mood, expressions and responses. After a while, the focus in the sessions shifted towards trying to connect with her through creating meaning to our shared experiences. I noticed how Gloriana liked to sit and look outside the window. Her attention would shift between paying attention to different things or people outside the window, or focusing on what was happening inside her room. I started making up songs based on what was happening outside the window when Gloriana was looking outside, and when her gaze shifted to look inside the room, I would make up lyrics based on what I saw in the room, in hopes of promoting a higher level of orientation to her surroundings. In an effort to promote emotional expression, I tried to make the melody of the song match the mood and facial expressions that Gloriana was displaying, and sometimes even make up lyrics that would reflect my interpretation of her emotional state.

3.6 Data collection methods

3.6.1 Semi-structured interviews

The purpose of qualitative research interviews is to gather descriptions of the interviewee's world view and then interpret the meaning behind it (Kvale & Brinkmann, 2015, p. 23 English translation). From a qualitative perspective, the qualitative research interview underlines the belief that processes and phenomena in the world needs to be described before one can develop theories based upon them, and they need to be understood before they can be explained. Through conducting such interviews, our attention is directed towards the cultural, everyday life situations that form the basis of our individual thinking, learning, knowledge, behavior and our way of understanding ourselves as human beings (Kvale & Brinkmann, 2015). There are 12 aspects of the qualitative research interview one needs to familiarize with before conducting an interview. These 12 aspects are: meaning making, qualitative knowledge, collecting descriptions, specification of situations, deliberate naivety and openness, focus on the topic, ambiguity over opposing statements, changes based on new insights, sensitivity towards interpretation, interpersonal interaction, and positive experience (Kvale & Brinkmann, 2015, p. 47).

By positive experience, Kvale and Brinkmann refer to how a successful research interview can prove to be a valuable and enriching experience for the person being interviewed, and might lead to the discovery of new insights into their life circumstance. By qualitative knowledge, Kvale and Brinkmann refers to how the qualitative research interview seeks to uncover knowledge expressed through normal speech, and argues that the thickness of descriptions and the strict ways of meaning interpretation in qualitative interviews, equals the accuracy of quantitative measures (Kvale & Brinkmann, 2015, p. 49).

I used semi-structured interviews as one of my 3 main data collection methods because it enabled me to have a conversation with the participants in real time. This method of data collection allowed me to be more flexible as the interview progressed. I could ask follow-up questions, or ask the participants to elaborate on something they mention that could be relevant for the research. Before I started conducting the interviews, I wrote an interview guide with possible open-ended questions I could ask based on the topics I wanted to cover. The interview guide is included in the consent form attached as appendix I. The interviews where audio-recorded, then transcribed.

3.6.2 Transcription

To transcribe means to transform, shifting from one form to another, a transcript is a translation from one narrative form to another narrative form. In this case, I have translated a spoken dialogue (semi-structured interviews) into a written discourse (Kvale & Brinkmann, 2015). Like any other situation where one needs to translate one language to another, there are certain expressions and gestures that could get lost in translation, or more fittingly: "lost in transcription". In a direct social interaction such as an interview, there are several aspects that might get lost in the process of translating it from spoken word to written. The pace of a conversation, voice pitch, facial expressions, gesticulations and body language are all important aspects of a social interaction and can only be perceived through personal experience. It would be impossible for someone to grasp all that through reading, even if rich descriptions of these aspects were provided. In short, Kvale & Brinkmann state that transcriptions are mere weak and decontextualized renderings of a direct interview conversation (2015, p. 187).

I transcribed the interviews myself by using the audio-recordings I did while interviewing the subjects. I chose to use a more formal and coherent writing style while transcribing the interviews. Excluding fill-in sounds like "eeh" or "uhm" or "hmph", I tried my best to write the interview down, word for word, including repetitions, pauses (…), laughter (**) and at times descriptions of the tone of their voice (which I put in brackets []). Though the participants had different dialects, I chose to write the transcription in Bokmål, the official Norwegian written language which is closer to my own dialect.

I followed the principles of EPICURE, an evaluation agenda that uses two acronyms to ensure the quality of my qualitative research. EPIC stands for engagement, processing, interpretation, and (self-)critique, and refers to the challenging process of producing meaningful and rich accounts (Stige, Malterud, & Midtgarden, 2011). CURE stands for (social) critique, usefulness, relevance, and ethics, and refers to the process of handling the preconditions and consequences of conducting the research (Stige et al., 2011).

I used Giorgi's method of descriptive phenomenological psychological analysis to analyze the transcriptions, a process that I have described below in the data analysis section.

3.6.3 Audiotapes of the sessions

All music therapy sessions were audio recorded. Even the ones where either the relatives or the nurses were participating. The purpose of the audio-recordings was to have something concrete to go back to, empirical data, in case I needed help to remember what happened, or I wanted to describe a moment that happened during the sessions that might be vital for the research. Through the descriptions of what happened during the sessions, the reader might gain more insight to what the participants were going through and how they were coping.

3.6.4 Self-reported logs

As the music therapist of this project, I wrote self-reported logs after every music therapy session. I made notes on the patient's mood, emotional state and physical state, documenting what happened during the session and how the patient responded or reacted to it. The logs varied in length, depending on how the session went. On days where the patient had a lot of activities for example, they tended to doze on and off during the session due to exhaustion or over stimulation. The self-reported logs were analyzed using the steps of descriptive phenomenological analysis, and the findings were compared to the findings of the analyzed interview transcriptions.

3.7 Implementation process

Due to some complications with the audiotape I was not able to record the interview I had with Martha's nurse, this was not discovered until I had started the process of transcribing the interviews. By then it was too late to conduct another interview. Fortunately, the nurse had prepared herself before the interview and written down answers to the questions from the interview guide on a sheet of paper which she had given to me after the interview. Although she had answered each question in short key-phrases, I still chose to use her notes as part of my data collection as it was still relevant and could prove to be useful information.

3.8 Data analysis method

3.8.1 Phenomenological approach towards data analysis

Phenomenology is based on the notion that our knowledge and understanding of everything around us comes from our experiences (Hein, Austin, & Appelbaum, 2001). How we engage

with society around us affects our worldviews, and through studying our experiences and our perception of these, we uncover how we create meaning to these experiences (Hein et al., 2001). The aim of this approach is to make clear the assumptions that guide our experiences in which we often take for granted. We experience things and form our own perceptions of these experiences. The meanings we create from our experiences are predominantly based on the social context and the history of our previous experiences (Kvale & Brinkmann, 2015; Leavy & Simons, 2014).

As a phenomenological researcher, I cannot assume that I know what meanings other people make of their own experiences. Therefore, I needed to become aware of my pre-assumptions by laying out my presumptions, and preunderstandings of the phenomenon through a process called *epoche* or bracketing. It consists of two steps, first I needed to state my unquestioned assumptions about the world, how I accept "day-to-day events and the assumptions that the world around me is 'real' and provides others with the same reality" (Hein et al., 2001: 6). I reflected upon these preunderstandings during the research process to try to become aware of how I might be influencing the research and how the research might be influencing me. This was something I continued to do throughout the entire course of research.

3.8.2 Giorgi's descriptive phenomenological psychological method

Based upon the work of philosopher Edmund Husserl and psychologist Merleau-Ponty, experimental psychologist Amedeo Giorgi developed a phenomenological method for researching humans in a psychological way (A. P. Giorgi & Giorgi, 2003). Giorgi sought to develop a phenomenological research method that allowed one to view the person as a whole human being. His research method is meticulously descriptive, and uses the phenomenological reductions (or epoche), to explore the intentional relationship between persons and situations, and discloses structures of meaning that exists in human experiences (A. P. Giorgi & Giorgi, 2003). Before I started analyzing the data collected through the interviews, I followed the steps of Giorgi's method of descriptive phenomenological analysis to analyze my logs from the music therapy sessions.

Following the 5 steps described in Giorgi's article (2012, p. 5) to analyze the data I collected I first: (1) had to read the whole transcript to get a sense of the whole. This was done to maintain a holistic view, which is essential for the phenomenological approach. (2) Next, I went back to the beginning and started marking the transcription whenever there was a shift in

the meaning. This process led me to start constructing meaning units that made it easier for me to see the whole picture. These meaning units carry no theoretical weight but might reveal my attitude as the researcher; what I think is relevant regarding the research purpose and what might be irrelevant. Another person might go through the same process I did and make different meaning units based on his or her persona, knowledge and research background. (3) During the third step, which Giorgi refers to as the 'heart' of the method, I transformed the data into expressions or themes on a more abstract level than the descriptions from the subject, and labeled them 'abstracted meaning'. In this step, according to Giorgi, the researcher seeks to find the hidden psychological meaning behind what the subject said using "the method of free imaginative variation" (A. Giorgi, 2012, pp. 5-6). Confounded by what Giorgi means by 'psychological meaning' and with no examples on how to use the method of free imaginative variation, I chose to follow Kvale & Brinkmann's instructions on the 3rd step by regarding the subject's answers in the most unbiased way possible, and transforming them into different themes based on my own interpretation of the subject's point of view (2015, p. 212). (4) In the fourth step, I reviewed the different expressions, and based on my own interpretation, wrote an essential structure of each participant's experience. 5) The descriptive statement was then examined considering the research purpose (A. Giorgi, 2012; A. P. Giorgi & Giorgi, 2003; Kvale & Brinkmann, 2015).

3.9 Data integration

The data collected through semi-structured interviews and music therapy logs were analyzed using Giorgi's descriptive phenomenological psychological method and then compared through data triangulation. I had three different perspectives gathered through two different methods of data collection per case, and a total of two cases, for my multiple case study. Table 1 gives an overview of the data collected and the different perspectives involved in case 1. Table 2 shows the data collected for case 2.

Table 1

Martha's husband, primary nurse and music therapist.

Theme	**Relative**	**Nurse**	**Music therapist**

1.	MT affords arousal (alertness, attention) and motivation (response, initiate movement	MT affords arousal (consciousness, alertness, focus) and motivation (creates interest)	MT affords arousal and motivation (of movement, participation)
2.	MT affords awareness of self and others		MT affords awareness of others and surroundings
3.	MT affords meaningful social interaction, communication and contact		MT affords meaningful social interaction, communication
4.	MT affords changes in quality of relation (how he views her, affects relation)	MT affords change in quality of relation (view in a different light)	MT affords change in quality of relation (strengthen relations)
5.	MT affords empowerment (enablement, participation, possibilities for action)	MT affords empowerment (enablement, possibilities for action)	MT affords empowerment (possibilities for action)
6.	MT affords space to just be	MT affords space (safe place, room to unfold)	MT affords structure and space

Table 2

Gloriana's son, primary nurse and music therapist.

Theme	**Relative**	**Nurse**	**Music therapist**
	MT affords motivation	MT affords motivation (of movement)	MT affords motivation (to respond, participate)
		MT affords awareness and thoughtfulness (pensive, reflective)	MT affords awareness (of others, surroundings)
1.	MT affords meaningful communication (enhancing quality of the response)	MT affords meaningful social interaction	MT affords meaningful social interaction
2.		MT affords change in quality of relation	MT affords change in quality of relation
3.	MT affords empowerment (enablement, capability)	MT affords empowerment (possibilities for action)	MT affords empowerment (enablement, influence)

4.	MT affords space (refreshing)	MT affords space (to breathe, just be)	MT affords space (to breathe, relax)

3.10 Merging

I started merging the data on the first case, comparing the themes gathered from the 3 different perspectives. Viewing the descriptive statements of the themes from each perspective, I looked for descriptions that were similar in topic and those that diverged, gathered them together, and rewrote them into common descriptive statements. I developed a rich understanding of all the perspectives, through revealing the elements that were shared among the participants and those that were unique to some. Once I finished writing the common descriptive statements for the first case, I continued with the second case repeating the same process. The findings and the critical assessment of these will be presented in the next chapter.

4. Findings

The findings described in this chapter resulted from first integrating data across three various sources: the relative, primary nurse, and session logs, to form main themes for each of the two cases; then merging the data across the cases to form 6 main themes which are presented below. Each of these 6 main themes are then presented through the perspectives and quotes of the participants from case 1, followed by case 2, and lastly compared to point out similarities or differences. In this chapter I only included the English translation of the participant quotes and extract logs, the original Norwegian text can be found in Appendix III. Towards the end of this chapter, I present the final step of my phenomenological analysis, namely the essential structure of participant experiences in music therapy, organized by case.

The main themes that emerged through the process of data analysis and integration:

1) Music therapy affords arousal and motivation
2) Music therapy affords awareness
3) Music therapy affords meaningful interaction
4) Music therapy affords changes in quality of relations
5) Music therapy affords empowerment
6) Music therapy affords space

4.1 Music therapy affords arousal and motivation

Martha

There is an agreement among the three informants that music therapy stimulates and motivates Martha to stay awake and alert for longer periods of time during the sessions. This is reflected through length of the sessions, most of them lasted between 30-40 min, but 2 of the sessions lasted up to 1 hour.

Not only does it stimulate and arouse, there seemed to be an agreement that music therapy motivates Martha to pay attention during the sessions. Music therapy creates and maintains her interest, and plays a supportive part in guiding her attention to different people and the activity in the room. In an interview after participating in a session, Martha's husband comments:

> *«Yes, in the first session Martha had been on an excursion to Haukeland. I think she was a little tired in that session. But she was awake at times, but maybe a little difficult to gain that very big attention I think. But today, it was considerably better you could say. There was much bigger alertness and like I said in there, she even moved her head back and forth. It is not often I have seen that between persons and it seems like she was able to follow along most parts of the session."*

As the music therapist, I noticed similar incidents and reflected upon them within my session logs. Directing my focus to one person and singing their name repeatedly seemed to motivate Martha to also direct her attention towards that person. This happened on more than one occasion, in the session with the primary nurse, the last session with the relative, and one time with another staff member. I noticed how Martha needed a little more encouragement and took longer time to move her head and gaze towards the nurse/staff member than with the relative. Music therapy combined with the husband's presence, served as an effective motivator for Martha to engage in and pay attention to what was happening in the session, as was noted in my session log from session 9 with relative:

> *«The music therapy student starts with a hello-song. The patient keeps eye contact with the student, when the student sings the patient's name, the patient turns her head a little to the side and looks at the relative when the student sings the relative's name. The patient keeps eye contact with the student when the student sings her own name."*

Not only did music therapy help Martha to stay alert and pay attention, music therapy also served as an effective way to regain Martha's attention when she started to lose focus. When asked if there was something the husband observed that surprised him, something unusual that the music therapist did, he replied:

> *«There was that effort to regain contact when Martha fell out of it. And to vary a little with both songs and volume and then try to get her attention back."*

Gloriana

For Gloriana, music therapy motivated her to pay attention to what was happening in the sessions through the various music activities such as music making, music listening and improvised songs. Music therapy motivated her to participate in her own way, and initiated spontaneous movement and responses from her through the different music activities. The

nurse commented on how quickly she reacted to different song choices, and how she seemed to be doing or expressing something different for each song that was played.

> *«But I noticed that there was a lot of that she moved her head a lot. I think I have never seen so much movement of head before. And it there many changes. Right away when you played a calm song she closed her eyes. It happened very fast. And then, when you started singing she opened them up. There was a lot of changes in the short period of time. From song to song I experienced that she looked very different."*

I also noticed this during the session with Gloriana, as well movements in her eyebrows when I would start talking to her or ask her questions:

> *«The patient moves her head when she shifts her gaze between the student, the nurse and what was happening outside the window […] The patient moves occasionally on her eyebrows, drawing the upwards, almost like a surprised look."*

Eye contact, movements in lips and facial expressions where other external indicators that implied that music therapy motivated Gloriana to move and respond to what she was experiencing. When asked on how the son thinks Gloriana experienced the session, he replied:

> *"Participant: It seems like she likes it. She likes it a lot, a little different, not just the same. For I think music just does good. Otherwise it seemed like she really liked it.*
>
> *"Interviewer: How to you perceive that she likes it?*
>
> *Participant: She smiles a little and there are a lot more reactions in her face."*

When asked to describe her response, the son answers that he saw her smile, and move her eyebrows. The way that she smiled at him, was different than before.

> *«Interviewer: Was there it different than what you experienced previously?*
> *Participant: Yes, especially that big smile with teeth and the whole package."*

Comparison

In both cases, music therapy proved to activate and motivate Martha and Gloriana to pay attention to the different music activities happening in the room, as well as to focus on and acknowledge the people that were present during the sessions. The music proved to be effective in drawing them out of an unconscious/unfocused state and inviting them in to participate in any way or form they could (or wanted to). Their enthusiasm for music therapy

showed in the way they initiated movements in head and neck, which surprised the others who participated.

Music therapy played an important part in motivating Martha to stay awake and alert during the sessions. In contrast to Martha, Gloriana did not need support from music therapy to stay alert, the challenge with her was to help motivate her to become more actively involved in her own rehabilitation process despite the limitations of her physical condition. This challenge proved to be met through music therapy, as it activated and motivated more reactions and responses in Gloriana.

4.2 Music therapy affords awareness

Martha

Music therapy helped increase Martha's awareness of the people in the room and what was happening. In the music therapy sessions, Martha kept shifting her gaze between the people in the room, seeking out the sources of sound, whether it was music playing or people talking or doing things that made noises in the background. I took notes on this after one session:

> *«The patient shifts between looking at the student, keeping eye contact, looking out the window, and keeping eye contact with the relative throughout the session. »*

Music therapy helped Martha orient herself to her surroundings when she woke up from deep slumber or dozing off. She would wake up disoriented, and making loud groans, but when the music therapist started to sing to her, her breathing and the volume of her voice would calm down considerably. In one of my session logs I described this in detail:

> *«The patient wakes up due to her own coughing, starts making loud groaning sounds, repetitive in the same pitch. The student matches the sounds she makes and sings hello to the patient. The student continues to sing in the same pitch on 'Row row row your boat' in the same tempo as the patient's breathing. The patient calms down, the sounds she makes get weaker and weaker."*

In another session, I brought Martha out of her room and into the common room and positioned her wheel chair beside the piano. Her reactions towards hearing the piano showed her awareness and recognition of the instrument that I reintroduced to her, and recognition of the piano piece. Her reaction shows that music therapy affords awareness of surroundings,

recognition of sounds/music and affects emotions. The following extract is from my logs on session 6:

> *«The student starts to play a piece on piano, the patient wakes up, a single tear runs down her cheek. The patient makes loud sounds, the student tries to calm the patient down. The patient calms down when the student starts to play the same piece again."*

Gloriana

Music therapy helped increase Gloriana's awareness of self and her feelings. Both her nurse and I had noticed a change in Gloriana's mood over the course of music therapy. The nurse commented on how Gloriana seemed more thoughtful and pensive in the past few weeks. There was a noticeable change in her mood, as she did not give a small smile as easily as she used to before she started participating in music therapy.

> *«But I experienced her to be a little more, I don't what to say depressed, but maybe a little more thoughtful now. A couple of weeks ago there was only either smiles or nothing, but now there is more facial expressions, a little more reflective […] It probably has to do with her coming from minimal consciousness to more conscious in a way. Maybe understanding more, not just an immediate response to when the music is on then I must be happy. Or when someone smiles then I must smile. Maybe a little more, more thoughtful perhaps."*

Comparison

Music therapy afforded Martha a greater awareness of others and her surroundings, and proved to be effective in calming her down whenever she woke up disoriented and distressed. In contrast to Martha, music therapy afforded Gloriana a greater awareness of herself, her thoughts and feelings. Her increase in awareness showed through changes in her mood, and behavior.

4.3 Music therapy affords meaningful social interaction

Martha

Music therapy afforded meaningful interactions between Martha and her husband, her nurse and her music therapist. Music therapy afforded Martha an opportunity to show acknowledgement of the people around her through motivating eye contact and movements of

her head. Through activating her voice by singing songs and vocal improvisation, Martha and I had several meaningful interactions together. Her husband commented on how music therapy seemed to invoke positive responses from Martha, and it seemed like there was a good communication between Martha and me.

> *«It was obvious that she was aware that there was something happening and reacted positively on both singing and when you tried to adjust to the same pitch as Martha. It seemed like there was some communication or response in that particular part. It is not easy to interpret in that way since Martha has quite the limited way of expressing herself. But compared to how I have experienced her usual way of expression I think it was a good communication in this session."*

Gloriana

The method of improvised singing was used in music therapy to validate and create meaning to the shared experiences and moments between Gloriana and other participants in the sessions. With Gloriana, music therapy was used to elevate her level of orientation to her surroundings through validating her interaction and connection with her environment.

Extract from session log:

> *«The patient's gaze moves a lot around the room and outside the window. The student notices this and starts to make up texts and sings about what is happening outside the window. When the patient moves her gaze inside the room the students sings about what is happening inside the room, about the nurse and the student."*

Furthermore, improvised singing proved to be a way for Gloriana and I to connect emotionally. This happened during one of the sessions where I asked Gloriana how she was doing and her facial expression indicated that she was having a bad day. In the beginning, I tried to cheer her up but found that she responded more to melancholic songs. I started to improvise lyrics that reflected (my perception of) her emotional state. Extract from session log:

> *«The patient coughs a little, the corners of her mouth still turned downwards, her mouth pursed. The student starts to sing/improvise: 'The sun is shining outside the window' repeats the sentence several times. Then plays it in minor and sings: 'rain is pouring inside my heart' and repeats the sentence."*

Comparison

Although the process of meaning making and social interaction looked different with the two different women, music therapy afforded ways of meaningful interaction with others by providing ways to communicate through singing and vocalizing emotions.

4.4 Music therapy affords change in the quality of relation

Martha

After participating in music therapy with Martha, both the husband and the nurse reported their experiences as positive. It was refreshing for them to see Martha in a different setting, that she was actively participating and responding to the music therapy. They both felt it was a nice and enriching experience, for themselves and for Martha. On a question on Martha's behavior in the music therapy session compared to outside the session, the husband responds that there is a clear difference. He goes on to describe what it is like to experience little contact with Martha:

> *«For I have experienced several times, being here without getting that great contact. Sometimes, it might be because she is tired, sometimes I have been here when there is very little contact. There has been those kind of fleeting glances, where you can't seem to get contact."*

The husband comments right after attending the music therapy session that he has rarely experienced such a strong connection with Martha. According to the husband, good contact is when you make eye contact with her and you feel like she sees you. Music therapy affords the husband, nurse and music therapist to achieve a good connection with Martha, through eye contact and the feeling that she recognizes who they are.

Gloriana

Gloriana's nurse experience in music therapy was very similar to Martha's nurse. She remarked that she had always had something to do, tasks to perform for Gloriana, and never really taken the time to sit down and spend time with her. When she did, she observed positive changes in Gloriana's behavior and remarks that there was a clear difference in her behavior in music therapy compared to her behavior otherwise.

> *«Yes, but I have never, I have always been doing something. Right, I have never sat down and just watched that something has happened. Something has always happened*

> *when I would be doing something or giving her food and such. But I noticed that there was a lot, that she moved her head a lot. I don't think I have ever seen so much head movement before."*

Music therapy afforded an opportunity for Gloriana and her son to connect with each other. Gloriana responded twice with a big open-mouthed smile during the last session with her son. Once after I had finished singing a song she picked for her son, and once after I finished with the song "You are not alone" which had become the theme song for our sessions. Through singing songs that they both liked, and had a history with, music therapy seemed to improve Gloriana and her son's quality of their interaction with each other, creating a meaningful experience for the them both. Extracts from session log:

> *«The student suggests that they (Gloriana) sing a song to the relative, the student starts on 'You are my sunshine'. The student sings it a couple of times, pauses and asks the patient if she should sing it again. The patient responds with coughing a little, then opening her mouth in a big smile. The student repeats the song. The patient looks at the relative during the whole song."*

Comparison

Music therapy allowed the participants of both cases to view Martha and Gloriana in a different light. Music therapy afforded improvements in quality of the relation between the participants and the women, through providing meaningful connections and bonding experiences.

4.5 Music therapy affords empowerment

Martha

Music therapy afforded possibilities of action for Martha, empowering her to actively participate in music making, through influencing song choices and vocal mimicking. This showed in how I described the interaction between Martha and I during one of the sessions:

> *«The student matches the patient, and sings on the same note. The student alternates between singing the same note as the patient and singing a little higher and lower. Repeats this several times. After a while the patient changes her pitch. Her voice goes up, the student matches her. The patient moves her voice to a lower register, the*

student backs up and sings the same. The student alternates between making a melody that fits the pitch the patient sings, and singing the same note as the patient."

In the beginning of the sessions, I was mostly the one choosing which songs to sing, and how much time we spent on a song before moving to another. After a couple of sessions, Martha started to influence which songs she and I sang during the sessions and how much time we spent on singing them. Sometimes she would fall asleep during a song we were singing, and I would move on to another song, and when she woke up she would start singing the song that we sang before she fell asleep.

«The student starts on 'Halleluja', the patient wakes up and sings along. The patient takes control over when they sing the chorus or the verse, the student follows the patient. The student ends the song after they have sung it many times."

Other times she would start making sounds, changing her pitch in a certain pattern, and I had to guess which song she was singing, some were easier to recognize than others.

«The patient starts to make sounds, the student tries to match what the patient sings. The student recognizes what the patient is singing and starts on 'Over the rainbow'."

Gloriana

Music therapy afforded Gloriana more possibilities to act, and react to what was happening in the sessions, and to the people that were present. Her nurse and her son reported to having seen broader range of expression in Gloriana during the music therapy sessions. Her expression started to vary in the form of more expressions and reactions in the face through moving her eyebrows upwards (in a surprised look) or downwards in a deep frown, to larger physical movement in the neck by turning her head from side to side. When I asked the nurse if she had seen Gloriana move her head before she replied:

«Participant: Yes, but not so much back and forth. I have seen that she has a little like this (demonstrates), but here it was the whole head back and forth, back and forth. It takes a lot of muscles to like (demonstrates).

Interviewer: To turn the head from side to side?

Participant: Yes, I have never like noticed that she has done it as much as that before."

The quality of the response was improved through music therapy in the last session where Gloriana's son was present. In the session with her son, she smiled at him twice with a wide, openmouthed smile, quote: "with teeth and all", something he said he had never experienced during previous visits. As her music therapist, I became more and more aware of her slightest change in expression or mood, and when she reacted to something I did, in a good or bad way, I would change the lyrics or change the 'mood' of the improvised songs.

> *«Towards the end og the session the student sings: «Rain is pouring outside the window» and further on: "Sun is shining inside my heart". When the student sings the last sentence the patient makes a quick but loud sighs. The student wonders if the patient disagrees with the lyrics, and continues with "Rain is pouring outside the window" without mentioning the sun."*

Comparison

Music therapy increased Martha and Gloriana's possibilities of action, showing that they were capable of a broader range of self-expression, and increased their sense of agency in the session through making conscious decisions that influenced the different music activities they participated in.

4.6 Music therapy affords space

Martha

Her nurse and husband mentioned several times during their interviews, how music therapy seemed to create a comfortable and positive experience, and motivate Martha to close her eyes, relax and just listen. The nurse mentioned that it seemed like Martha felt safe, which is important that she feels, otherwise it would be difficult for her to relax.

Martha tended to make sounds in the back of her throat whenever she was awake, the sounds where repetitive, and came out like groans every time she would exhale. I noticed during the sessions that after spending some time singing with Martha, her voice register would lower as well as the volume of her voice. Music therapy seemed to arouse her to a state of alertness, yet create a calm atmosphere for her to just be and listen to the music.

> *«Towards the end of the session the patient looks outside the window a lot, laying still. You can barely detect small sounds from her throat when she breathes."*

Martha's nurse and husband also reported music therapy to be a good and positive experience for themselves as well. The relative comments that although his own participation was more passive, it was still nice to be present in the session:

> *«I thought it was very nice to be there, without me taking that much… It is not often that I sing, but it was very nice to participate in a session like that."*

Gloriana

Gloriana's nurse and son thinks that music therapy affords Gloriana space to breathe and relax. Music therapy serves as a refreshing intermission in her otherwise busy schedule consisting of medical checks, and physically challenging sessions in occupational-, speech-, and physical therapy. The nurse comments on how music therapy seems to be a nice breather for Gloriana, and affords her space to just sit, listen, think and feel. Which are all important aspects of being human.

> *«I saw clearly that she was enjoying herself. I think it is very rewarding especially for these types of patients. Like all the time, there is one or another thing that needs to happen or small things that we do. Now it was only to focus on sitting and listening and feeling it. No one that comes to pull at you because you are sitting wrong. I think it is very rewarding to just feel and think."*

In the interview with the nurse, she commented on how music therapy seems to bring Gloriana out of the confinements of her wheel chair and into the world outside. By focusing on what is happening outside the window, Gloriana seems to be able to 'escape' her physical condition, or what limits her physically, freeing her to join (metaphorically speaking) the world outside.

> *«But here it is perhaps more like to bring one out of the situation in a way. Out of the wheel chair by thinking and singing about the weather outside. Perhaps they feel or yes, I don't know, a little out of that situation then, in a positive way. That they are not bound to the situation if you sing and talk about what is happening outside."*

Comparison

Music therapy afforded space for Martha and Gloriana to relax and be present without having to do something. Music therapy was a refreshing break in their otherwise quite busy

schedules, and gave them room to pull back if the they needed to, or engage more in the music activities if they chose to do so.

4.7 Essential structure of the participant experiences

Case 1

The relative (the husband) regards his experience in music therapy as a positive experience. Although he views his participation as more passive, he made several observations on how music therapy stimulates Martha to stay awake and alert during the session. He also mentions how music therapy seemed to motivate Martha to stay engaged in the session, actively participating and communicating through the musical activities. The relative comments on the difference in Martha's alertness and attention compared to other times he has visited her. He was intrigued by how Martha and the student interacted and communicated with each other (through music), and how the student seemed to achieve contact with Martha in a way that he has rarely experienced himself.

Martha's primary nurse regards her participation in music therapy as a positive learning experience. Although she states that it is difficult to gage Martha's mood due to her limited way of self-expression, the nurse noticed how Martha actively engaged in the musical activities and how it positively affected her emotions and motivated her to stay alert and focused. She believes that Martha also had a positive experience and Martha seemed to feel safe and relaxed during the session, which she thinks is important for her progress. The muscle tension in Martha's body has led to stiffness in her arms and legs, and the nurse believes that music therapy helps with muscle relaxation.

The music therapist believes that music therapy has a positive effect on Martha's alertness and attention, and enables her to actively participate in musical activities such as music listening and music making. The music therapist comments on how music therapy seems to enable her to connect to and interact with people around her. Music therapy also seems to ground Martha, and helps her orient herself to her surroundings whenever she falls asleep and wakes up disoriented. The therapist also noticed how music therapy seems to motivate Martha to take control in the sessions by determining which song to sing, it also gives her space when she needs to take a step back.

Case 2

The relative (the son) regards music therapy as a good thing. He saw the positive effect music therapy had on Gloriana's alertness, attention and motivation to participate and respond to what was happening in the session. He personally enjoyed the songs used in the session, and commented on how he has never seen her smile so big with her teeth showing, as she rarely opens her mouth other than to cough. He believes that music therapy has helped to improve Gloriana's condition.

The nurse views her own experience in music therapy as positive, and believes it was a rewarding experience for Gloriana as well. She comments on how music therapy gave them both room to breathe, relax and just be present in the session. The nurse reflects on how the staff came to realize that music had a significant calming effect on Gloriana, and comments on how music therapy has seemed to bring forward a more thoughtful, serious side to her. Although the nurse has observed less smiles from Gloriana lately, the nurse does not believe that it is a sign of depression, but rather a sign of her starting to gain more awareness of self and others. The nurse thinks that the music therapy gave Gloriana a way to "escape" the confinements of her wheel chair and join the world outside.

The music therapist experienced that music therapy motivates Gloriana to stay alert, focus, and actively participate in music listening. The therapist takes notice of how music therapy seems to create a safe and calming atmosphere and gives Gloriana the choice of taking on a more active role in the music making, through her reactions and responses, or a more passive role where she can close her eyes and just listen. The music therapist believes that music therapy gives Gloriana an opportunity to experience meaningful social interactions with other people (nurses, relative, music therapist), despite her limited ways of communicating.

5. Discussion

In this research project, I tried to explore what music therapy affords individuals with severe traumatic brain injury. This was accomplished through an integration of data from semi-structured interviews with the individual's relative and primary nurse, and my own session logs. I will now give a short summary of main findings from the data analysis before I start to discuss those findings in light of theory and previous research. Finally, I will present a critical assessment of the research process, limitations of my research, and implications for future research and clinical practice.

My research question was: what can music therapy afford for individuals with severe traumatic brain injury? The main findings demonstrate that music therapy affords arousal and motivation, through stimulating Martha and Gloriana to pay attention to the people around them, the music activities that were offered and their own surroundings. The song preferences and the different music therapy methods utilized in the sessions proved to be effective in motivating them to participate. Music therapy also affords awareness. In one case, music therapy helped increase awareness of self, and emotions. In the other case, music therapy helped increase awareness of others and surroundings. Furthermore, music therapy affords meaningful social interactions, through meaningful ways of communicating. Meaningful social interactions were possible due to music therapy affording improvements in the quality of relation between the individuals with TBI and their relatives and nurses. Such improvements in quality of relation include more intentional and meaningful connection, and opportunities to experience bonding. Music therapy affords empowerment through increasing possibilities for action, thus increasing the women's sense of agency, and broadening their range of response. Lastly, music therapy affords space to breathe, relax and just be. Music therapy afforded the women space to pull back if they were tired or things became too much, releasing their sense of obligation of having to do something when someone else was in the room.

5.1 Affordance as a relational concept

The findings of this study reveal that music therapy can afford many things for individuals with severe TBI. It became clear however, that what music therapy affords may differ according to what methods are used, which depends on the individual's emotional, social and psychosocial needs, and what kind of music history the individual had before sustaining the injury. This can be linked to DeNora's theoretical concepts of affordance and appropriation.

DeNora (2000) bases her concept of affordance on the notion that the affordance of an object, how one perceives and behaves towards it, is structured by the cultural and social setting, and reveals the socio-cultural resources we draw upon in any setting (Anderson & Sharrock, 1992). When we recognize music as an 'affordance structure' we start to understand music as a space for meaning and lifeworld making (DeNora, 2000). The idea of music as a space for meaning and lifeworld making can be linked to the resource-oriented perspectives in psychotherapy where resources are understood as the sum of all aspects of processes and the whole life context of a person such as "knowledge, abilities, physical characteristics, strength, financial situation and social relations" (Grawe & Grawe-Gerber, 1999, p. 66-67). Grawe and Grawe-Gerber, claim that the resources of a person represent 'opportunity spaces' where the person is capable of utilizing their potentials to satisfy the basic needs that they have.

Affordance can in this way be understood to represent the structure of these opportunity spaces (resources), and how the person chooses to utilize their potentials (music and social relations) to satisfy their needs (promote health) would represent the person's process of appropriation. Stige defines affordance as "what someone or something offers in relation to someone or something else. The affordance is therefore in the relationship, not in the 'thing itself'" (Stige, 2004, p. 106). Stige's idea of affordance as a relational concept originates from Gibson's original theoretical concept, that refers to affordance as something the environment offers or provides for the animal (Gibson, 1979). When affordance is understood as a relational concept the affordances of an object is perceived in view of the relation between the object and the user (history, experiences), and the relation between the user and their social and/or environmental context.

Regarding this definition of affordance as a relational concept, I will now discuss what implications music therapy can have for the relationships between the client and the music, the client and the music therapist, and finally the relationship between the client and their social context and environment.

5.2 Relationship between client and music

The findings from this study have documented what music therapy afforded the clients in the process of music therapy through the understanding and application of music as a health resource. The potential health resources of the music in the music therapy sessions relied on the way the clients related to music before the injury. The music chosen for the music therapy

sessions were songs that were familiar to the patients based on their music history and background. During interviews with the relatives before the music therapy intervention had started, the relatives revealed that music was a large part of both clients' lives before the injury but in very different ways. Their relation to music preinjury showed in the way they participated in the music therapy sessions. Even though the severity of Martha and Gloriana's injuries limited them in how they could respond to the music, the way they responded in music therapy showed that there was more to their experience of music than just having a 'good time' and feeling relaxed. One could speculate that music therapy afforded arousal and motivation in the clients to stay alert and participate because of the preference based music used in the sessions. This statement would correspond well to literature on music and health in the field of musicology, where the health-enhancing aspect of music relies on the way the individual utilizes music to promote his or her own health. Music can afford different things for different people depending on the individual's relation to music and his or her cultural and social setting (Anderson & Sharrock, 1992; DeNora, 2000; Stige, 2004). The benefits of music come in play when the individual make use of the music in a health-enhancing way based on their previous music experiences and background. DeNora refers this process of accessing the health-enhancing effects of music as appropriation (DeNora, 2000).

Furthermore, recent music therapy literature influenced by musicology explore how people use music in their everyday life as a way to regulate feelings and promote health (DeNora, 2000; Gary, 2014). Inspired by Small's concept of musicking, Bonde offers a new concept of health musicking (Bonde, 2011) and gives us insight into different narratives on health musicking and how that affects and shapes our musical life stories (Bonde et al., 2013). DeNora, and later Ruud, have written about how music can serve as a technology of self (DeNora, 2000; Ruud, 2002, 2013a). Ruud goes even further to explore if music can serve as a cultural immunogen (Ruud, 2002, 2013a). All these references point towards seeing music as a health resource that people can use to promote health and their own sense of well-being. According to Ruud, the way music is utilized in music therapy can contribute to an increased sense of self and reaffirm identity which are important steps towards promoting health and quality of life (Ruud, 1997). Music can then be regarded as a potential resource in the performance of health and quality of life through providing a strong, flexible and differentiated identity (Ruud, 1997, 2006, 2011, 2013a, 2013b).

Based on Ruud's definitions of the four main aspects of quality of life (Ruud, 1997), the main findings of this study show that music therapy promotes the clients' quality of life through

enhancing their basic feeling of vitality. In one of the cases, music therapy helped the client increase her awareness of herself and her feelings. How she experienced the sessions were expressed through facial expressions, whether the music corresponded with her calm and content state of mind, or her more brooding and pensive state of mind. Music therapy also promoted the clients' quality of life by reaffirming their sense of agency and empowering them through increasing their possibilities for action, and providing opportunities for bonding through shared music experiences. Both cases showcased the opportunities music therapy offers when it comes to social involvement, inclusion and increasing the quality of relation through meaningful ways to communicate and shared music experiences. Lastly, music therapy helped the clients promote quality of life through shared meaningful experiences, with the relatives and nurses, that gave them a sense of wholeness and purpose in life in spite of their physical condition and limitations.

5.3 Relationship between client and music therapist

Similar to DeNora's concepts of affordance and appropriation, resource-oriented approaches in music therapy focuses on enabling the client to gain understanding of how they can access and utilize their resources to increase their efforts in promoting health in everyday life (Rolvsjord, 2004; 2010; 2016 Schwabe, 2005). The health resources in these cases presented by this study are the music (as discussed earlier), and the shared music experiences and relationship formed between the client and the therapist.

Literature on resource-oriented approaches in music therapy emphasizes the importance of enabling the clients to become active partners and mutual collaborators in the process towards health promotion (Rolvsjord, 2010; Schwabe, 2005). Regarding Ruud's concept of quality of life, the resource-oriented approach is also influenced by the empowerment philosophy. The focus of the music therapy sessions in this study were on using methods that accessed and showcased the clients' strengths and potentials. In doing so, the clients slowly started to show more interest in the sessions, and increase their efforts to stay alert and focused. However, due to the severity of the clients' injuries, it is difficult to tell how much of the change in the clients were induced by the way the therapist was helping and supporting the client in an effort to increase to promote their health or if the changes in therapy were the result of the client increasing their own effort in accessing and utilizing their resources to promote health.

5.4 Relationship between client and social context

The way the clients reacted to when the relatives or nurses were present in the music therapy sessions gives us a sound reason for attributing some of the therapeutic changes to their presence and participation in music therapy. Perhaps it was the combination of the resource-oriented approach in music therapy and the presence of the relative or nurse that solidified the meaningful experience that the clients had, and helped fulfill their need for belonging and social security (Maslow & Lewis, 1987; Ruud, 1997). Or maybe it was the clients' relation to the music combined with the relation to the relatives, that afforded the motivation behind their increased interest and participation in the session (DeNora, 2000). Or perhaps it was the shared meaningful music experience between the clients and the relative or nurse, that lead to improvements in the quality of relations between the two dyads.

The integration of data from this study suggests that there is a clear consensus that the combination of music therapy and the involvement of the clients' relatives and nurses resulted in fulfilling their social and psychosocial need of belonging and experiencing a deeper connection with another person. Although the primary focus of music therapy was to prompt health-enhancing change in the clients, the relatives and nurses of the clients reported to receiving indirect benefits from their participation in music therapy.

The relatives in both case studies reported to finding it difficult to communicate with the clients after the injury due to the severity of the injury and the limitations of non-verbal communication. Music therapy afforded them the opportunity to engage the client in meaningful social interactions, and sharing meaningful music experiences with the client. Not only did music therapy help promote health through affording meaningful social interactions, the meaningful social interactions and shared music experiences led to improvements in the quality of relation between the client and the relative, and improvements in the quality of relation between the client and nurse.

Both nurses viewed their experience in music therapy as positive, and that it was refreshing to observe the clients in a different setting, and through a different professional lens. They both noticed things that the clients did in the music therapy sessions that they had never observed outside of music therapy. The findings of this study reveal the therapy induced changes in the relationship dynamics between the client and nurse in both case studies.

Relating to Ruud's aspects of quality of life, music therapy contributes to a sense of belonging in the participants of this project, and highlights the importance of experiencing meaning and coherence in relation to experiencing the subjective state of well-being (Ruud, 1997).

The findings of this study also highlight the importance of a resource-oriented approach towards the music therapy intervention when working with individuals with severe traumatic brain injury, and supports Gilbertson's reasoning for regarding traumatic brain injury as "a traumatic social nervous system injury" (Gilbertson, 2016, p. 364), where the focus of rehabilitation should be to enable the individual to take an active part in their own rehabilitation process, and interact with their surrounding reality through the involvement of family, health-enhancing music experiences, and improvements of relations between the individual at his/her social and environmental context.

5.5 Critical reflection

For this study, I did literature searches on several of the topics covered in this thesis by using the Oria database of UiB, in addition to the literature searches, I have used the reference lists of recommended literature from lectures, seminars and professors/supervisors. As a result, there might be some holes in my literature review and some perspectives that might be lost. I am aware that some of the literature may be considered outdated, but I chose to include them in this thesis due to the lack of more recent research and literature on some of the topics I wanted to cover in my literature review. I also realize that by deciding to cover that many perspectives and topics in the literature review, I was not able to go as deep as I wanted into some of them.

One of the biggest challenges during the course of this project has been to balance my dual role as both the music therapist and the researcher. I am aware that my own biases towards music therapy and my own wishes for this project may have reflected in the way I asked questions and directed the participants towards topics that I wanted to explore more. I also discovered the challenge of being both the music therapist and the interviewer during the interviews with the participants. I am sure that my dual roles affected how the participants answered my questions. Some of their answers might reflect how they thought I would like them to answer. Due to a faulty recording, I only had the notes from one of the interviews with a nurse. Although the few notes that she scribbled down did cover all the questions that the interview guide provided, they were short and in key-sentences. I still chose to include her

notes as part of my data since it was too late to redo the interview. Had I discovered the faulty recording sooner, I would have chosen to reconduct the interview, since the answers the nurse gave during the actual interview were vastly different from the answers she scribbled down on a piece of paper.

After spending some time reflecting on the way I chose to do the music therapy intervention, I would have ideally liked to have included more sessions with each client over a longer period of time. I discovered that in working with this group of people, particularly regarding the severity of their injury, any progress in the therapeutic process happens very slowly. It took time to get to know the patients, what they liked and did not like through the responses they gave. It also took a long time to notice all the small, subtle changes in facial expressions or other parts of their body that could give me an inkling on what they were thinking or feeling. When I concluded the last session, I felt like the patients and I had only just begun our journey towards discovering ways to promote health and quality of life through the music experiences and the relations formed within the therapy sessions.

If I could redo this project again, I would try harder to include the relatives and involve them more in the therapeutic process. I would have asked them to join more than the two they were required to attend to according to the consent form.

5.6 Recommendation for future research and practice

From a medical standpoint, success in rehabilitation is regarded as the patient going from a codependent state, where one is dependent on someone else to fulfil their basic needs, to regain functional independence to the point where one can fulfill those needs by themselves. Unfortunately, this an unachievable standard for a complex and comprehensive injury such as TBI. In view of music therapy literature on the subject of music therapy and TBI, there is perhaps a need for a more humanistic and resource-oriented approach when working with people with TBI, in valuing and validating positive experiences, and strengthening the individual's awareness of self, relation to other people, and their surrounding reality.

The results of my literature review show a missing hole when it comes to literature on family perspectives in music therapy and traumatic brain injury. In view of the results of this study, there is a clear need for further development of a resource-oriented and family-centered approach in working with music therapy and individuals with TBI. On a separate note, music

therapy should also be offered to the families and not just the injured person, to help them cope with new relationship dynamics and readjusting to the family situation post-injury.

5.7 Conclusion

The purpose of this thesis was to explore what music therapy can afford for two individuals with severe traumatic brain injury. The individuals participated in nine sessions each, where their relatives joined two of them and the nurse joined one. The data was collected through semi-structured interviews with the relatives and the nurses after they participated in music therapy, and session logs written by the music therapist. The topic of the semi-structured interviews was related to how the participants made sense of the individuals experience of music therapy, what they observed from the interaction between the therapist and the individuals, and if there was a difference in behavior in the therapy session compared to outside the therapy room. Each case had three perspectives from three different participants: the relative, the nurse and the music therapist.

Although the music therapy sessions looked very different in the two case studies due to the different needs and medical condition of each case, there were 6 main findings that were common for both cases. The main findings of this study showed that after working with two individuals with severe traumatic brain injury, music therapy afforded arousal and motivation to stay alert and pay attention to what was happening in the music therapy sessions through using familiar and preference based songs. Music therapy also afforded them awareness, of self, others and the environment. Furthermore, music therapy afforded meaningful social interaction through providing means of meaningful communication and meaningful shared music experiences between the individual and relative, individual and nurse, and individual and music therapist. These experiences lead to affording improvements in the quality of relation between the participants. Lastly, music therapy afforded the participants space to breathe through creating a relaxing atmosphere and a safe place to just be. Hopefully, this research contributes to our awareness of what music therapy can afford for individuals with severe traumatic brain injury, with a resource-oriented and family-centered approach.

6. References

Aldridge, D. (1994). An overview of music therapy research. *Complementary Therapies in Medicine, 2*(4), 204-216. doi:10.1016/0965-2299(94)90021-3

Anderson, R., & Sharrock, W. (1992). Can organisations afford knowledge? *Computer Supported Cooperative Work (CSCW), 1*(3), 143-161. doi:10.1007/bf00752436

Antonovsky, A. (1991). *The structural sources of salutogenic strengths*: John Wiley & Sons.

Baker, F. (2001). The effects of live, taped, and no music on people experiencing posttraumatic amnesia. *Journal of Music Therapy, 38*(3), 170-192.

Bengtsson, S. L., Ullen, F., Ehrsson, H. H., Hashimoto, T., Kito, T., Naito, E., . . . Sadato, N. (2009). Listening to rhythms activates motor and premotor cortices. *Cortex, 45*(1), 62-71. doi:10.1016/j.cortex.2008.07.002

BIAA. (2015, 2015). About Brain injury. Brain Injury Association of America.

Bonde, L. (2011). Health musicking - music therapy or music and health? A model, empirical examples and personal reflections. *Music & arts in action, 3*(2), 120-140.

Bonde, L., Ruud, E., Skånland, M. S., & Trondalen, G. (2013). *Musical life stories - Narratives on health musicking* (Vol. 6). Oslo: Senter for musikk og helse, Norges musikkhøgskole.

Bruscia, K. E. (2013). *Defining Music Therapy* (3rd ed ed.). University Park: University Park : Barcelona.

CDC. (2017, April 2017). Traumatic Brain Injury: Get the facts. Centers for Disease Control and Prevention. .

Cella, D. (1994). Quality of life: Concepts and definition. *Journal of pain and symptom management, 9*(3), 186-192.

Clark, A. (1998). *Being there: Putting brain, body and world together again*. Bradford: Bradford Books.

Clark, A. (2011). *Supersizing the mind: Embodiment, action, and cognitive extension*. Oxford: Oxford University Press.

Dalton, J. H. E., M.J.

Wandersman, A. (2001). *Community psychology, linking individuals and communities*.

London: Wadsworth (Thomson Learning).

DeNora, T. (2000). *Music in Everyday Life*. Cambridge: Cambridge : Cambridge University Press.

Duncan, B. L. M., S.D., Wampold, B. E., & Hubble, M. A. (2010). *The heart and soul of change* (2nd Edition ed.). Washington: American psychological association.

Edwards, J., & Gilbertson, S. (2016). *Music Therapy and Traumatic Brain Injury*: Oxford University Press.

Felce, D. P., J. (1995). Quality of life: It's definition and measurement. *Research in developmental disabilities, 16*(1), 51-74. doi:doi:10.1016/0891-4222(94)00028-8

Finkelstein, E. C., P. Miller, T. and associates. (2006). *The Incidence and Economic Burden of Injuries in the United States*. New York (NY): Oxford University Press.

Flower, C., & Oldfield, A. H. V. (2008). *Music Therapy with Children and their Families*. London: London, GB: Jessica Kingsley Publishers.

Gary, A. (2014). *How music helps in music therapy and everyday life*: Ashgate Publishing Ltd.

Gibson, J. J. (1979). *The ecological approach to visual perception*. Boston, Mass: Houghton Mifflin.

Gilbertson, S. (2005). Music Therapy in Neurorehabilitation after Traumatic Brain Injury: A Literature Review. In D. Aldridge (Ed.), *Music Therapy in neurorehabilitation* (pp. 83-138). London, UK: Jessica Kingsley Publishers.

Giorgi, A. (2012). The Descriptive Phenomenological Psychological Method. *Journal of Phenomenological Psychology, 43*(1), 3-12. doi:10.1163/156916212X632934

Giorgi, A. P., & Giorgi, B. M. (2003). The descriptive phenomenological psychological method *Qualitative research in psychology: Expanding perspectives in methodology and design.* (pp. 243-273). Washington, DC, US: American Psychological Association.

Gordon, A. W., Zafonte, A. R., Cicerone, A. K., Cantor, A. J., Brown, A. M., Lombard, A. L., . . . Chandna, A. T. (2006). Traumatic Brain Injury Rehabilitation: State of the Science. *American Journal of Physical Medicine & Rehabilitation, 85*(4), 343-382. doi:10.1097/01.phm.0000202106.01654.61

Grawe, K., & Grawe-Gerber, M. (1999). Ressourcenaktivierung. *Psychotherapeut, 44*, 63-73.

Hadzic-Andelic, N., & UiO. (2010). *Moderate-to-severe traumatic brain injury in Eastern Norway : trends and challenges*

Hein, S. F., Austin, W. J., & Appelbaum, M. I. (2001). Empirical and Hermeneutic Approaches to Phenomenological Research in Psychology: A Comparison. *Psychological Methods, 6*(1), 3-17. doi:10.1037/1082-989X.6.1.3

Hyde, K. L., Lerch, J., Norton, A., Forgeard, M., Winner, E., Evans, A. C., & Schlaug, G. (2009). Musical training shapes structural brain development. *The Journal of neuroscience : the official journal of the Society for Neuroscience, 29*(10), 3019. doi:10.1523/JNEUROSCI.5118-08.2009

Jacobsen, S. L., Thompson, G., Lindstrøm, M. S., Oscarsson, S., Ridder, H. M., Haslbeck, F., . . . Pasiali, V. (2016). *Music Therapy with Families : Therapeutic Approaches and Theoretical Perspectives*. London: London: Jessica Kingsley Publishers.

Janata, P., Tillmann, B., & Bharucha, J. J. (2002). Listening to polyphonic music recruits domain-general attention and working memory circuits. *Cogn Affect Behav Neurosci, 2*(2), 121-140.

Kleim, J. A. (2011). Neural Plasticity and Neurorehabilitation: Teaching the New Brain Old Tricks. *Journal of Communication Disorders, 44*(5), 521-528. doi:10.1016/j.jcomdis.2011.04.006

Kvale, S., & Brinkmann, S. (2015). *Det kvalitative forskningsintervju* (3. utg., 2. oppl. ed.). Oslo: Gyldendal akademisk.

Leavy, P., & Simons, H. (2014). *Case Study Research* (1 ed.): Oxford University Press.

Maslow, A., & Lewis, K. J. (1987). Maslow's hierarchy of needs. *Salenger Incorporated, 14*, 987.

Murphy, K. (2016). Interpretivist Case Study Research *Music Therapy Research* (3rd Edition ed., pp. 570-577). Dallas TX: Barcelona Publishers.

Nayak, S., Wheeler, B. L., Shiflett, S. C., & Agostinelli, S. (2000). Effect of music therapy on mood and social interaction among individuals with acute traumatic brain injury and stroke. *Rehabilitation Psychology, 45*(3), 274-283. doi:10.1037/0090-5550.45.3.274

NIH. (1999a). *Rehabilitation of Persons with Traumatic Brain injury. Program and abstracts.* . Paper presented at the NIH Conference on Rehabilitation of Persons with Traumatic Brain Injury, Natcher Conference Center, Natiional Institutes of Health, Bethesda Maryland.

NIH. (1999b). NIH Consensus Development Panel on Rehabilitation of Persons With Traumatic Brain Injury. *Jama, 282*(10), 974-983.

Norman, D. A. (1988). *The psychology of everyday things*. New York: Basic Books.

Næss, S. (2001). Livskvalitet som psykisk velvære. *Tidsskrift for den norske lægeforening, 121*(16), 1940-1944.

Ozturk, B. T., M.

Aktekin, Z., & Kurtoglu, I. (2002). Morphometric comparison of the human corpus callosum in professional musicians and non-musicians by using in vivo magnetic resonance imaging. *Journal of Neuroradiology, 29*, 29-34.

Patel, A. (2003). Language, music, syntax and the brain. *Nature Neuroscience, 6*(7), 674-681. doi:10.1038/nn1082

Paul, S., & Ramsey, D. (2000). Music therapy in physical medicine and rehabilitation. *Australian Occupational Therapy Journal, 47*(3), 111-118. doi:10.1046/j.1440-1630.2000.00215.x

Ragnarsson, T. K. (2006). Traumatic Brain Injury Research Since the 1998 NIH Consensus Conference: Accomplishments and Unmet Goals. *Journal of Head Trauma Rehabilitation, 21*(5), 379-387. doi:10.1097/00001199-200609000-00002

Rapley, M. (2003). *Quality of life research: A critical introduction*. London, GBR: SAGE.

Rolvsjord, R. (2004). Therapy as empowerment. Clinical and political implications of empowerment philosophy in mental health practices of music therapy. *Nordic journal of music therapy, 13*(2), 99-111. doi:10.1080/08098130409478107

Rolvsjord, R. (2010). *Resource-oriented music therapy in mental health care*. Gilsum: Barcelona Publishers.

Rolvsjord, R. (2016). Resource-Oriented Perspectives in Music Therapy *Oxford Handbook of Music Therapy* (1 ed.): Oxford University Press.

Rolvsjord, R., Gold, C., & Stige, B. (2005). Research rigour and therapeutic flexibility: Rationale for a therapy manual developed for a randomised controlled trial. *Nordic journal of music therapy, 14*(1), 15-32. doi:10.1080/08098130509478122

Rustøen, T. (1991). *Livskvalitet - En sykepleieutfordring*. Oslo: Gyldendal.

Ruud, E. (1997). Music and the Quality of Life. *Nordisk Tidsskrift for Musikkterapi, 6*(2), 86-97. doi:10.1080/08098139709477902

Ruud, E. (2002). *Music as a cultural immunogen - Three narratives on the use of music as a technology of health*.

Ruud, E. (2006). Musikk gir helse (pp. 17-30). Oslo: Cappelen akademisk forl., cop. 2006.

Ruud, E. (2011). *Musikk, identitet og helse – hva er sammenhengen?* : Norges musikkhøgskole.

Ruud, E. (2013a). Can music serve as a "cultural immunogen"? An explorative study. *International Journal of Qualitative Studies on Health and Well-being, 8*. doi:10.3402/qhw.v8i0.20597

Ruud, E. (2013b). *Musikk og identitet* (2. utg. ed.). Oslo: Universitetsforl.

Sander, A. M., Seel, R. T., Kreutzer, J. S., Hall, K. M., High, W. M., & Rosenthal, M. (1997). Agreement between persons with traumatic brain injury and their relatives regarding psychosocial outcome using the community integration questionnaire. *Archives of Physical Medicine and Rehabilitation, 78*(4), 353-357. doi:10.1016/S0003-9993(97)90225-2

Schlaug, G. (2015). *Musicians and music making as model for the study of brain plasticity*. Progress in brain research.

Schlaug, G., Jäncke, L., Huang, Y., Staiger, J. F., & Steinmetz, H. (1995). Increased corpus callosum size in musicians. *Neuropsychologia, 33*(8), 1047-1055. doi:10.1016/0028-3932(95)00045-5

Schwabe, C. (2005). Resource-oriented music therapy ; the developement of a concept. *Nordic journal of music therapy, 14*(1), 49-56. doi:10.1080/08098130509478125

Skeie, G. O., Einbu, T., & Aarli, J. (2010). *Singing Improves Word Production in Patients with Aphasia*: Imperial College Press.

Small, C. (1998). *Musicking : the meanings of performing and listening* Music Culture,

Snyder, C. R. L., S.J. (2002). *Handbook of positive psychology*. Oxford: Oxford University Press.

Sollid, S., & Ingebrigtsen, T. (2012). Epidemiology. In T. Sundstrom, P.-O. Grände, N. Juul, C. Kock-Jensen, B. Romner, & K. Wester (Eds.), *Management of Severe Traumatic Brain Injury: Evidence, Tricks, and Pitfalls* (pp. 3-8). Berlin, Heidelberg: Springer Berlin Heidelberg.

Stake, R. (2005). Case Study *Sage Handbook of qualitative research* (3rd edition ed., pp. 443-466). Thousand Oaks, CA: Sage.

Stige, B. (2004). Community music therapy: culture, care and welfare. In G. Ansdell & M. Pavlicevic (Eds.), *Community music therapy*. London: Jessica Kingsley Publishers.

Stige, B., & Aarø, L. E. (2011). *Invitation to community music therapy*. New York, NY: Routledge.

Stige, B., Ansdell, G., Elefant, C., & Pavlicevic, M. d. s. (2013). *Where Music Helps : Community Music Therapy in Action and Reflection*. Farnham: Ashgate Publishing Ltd.

Stige, B., Malterud, K., & Midtgarden, T. (2011). EPICURE - An Agenda for Evaluation of Qualitative Research. *EPICURE - Et dialogisk redskab til evaluering af kvalitativ forskning, 1*(1).

Thaut, M., & McIntosh, G. (2010, March 24). How music helps to heal the injured brain: Therapeutic use crescendos thanks to advances in brain science. *Cerebrum*, 12.

Veenhoven, R. (2005). Apparent quality of life in nations: How long and happy people live. *Social indicators research, 71*, 61-86. doi:10.1007/s11205-004-8014-2

Vik, B. (2017). *Nevroplastisk effekt av å spille piano i kognitiv rehabilitering etter traumatisk hjerneskade*. Paper presented at the Regional tverrfaglig forskningskonferanse innen rehabilitering, Regionalt komptetansesenter for habilitering og rehabilitering, Haukeland Universitetssykehus.

Vik, B., Skeie, G., & Specht, K. (In Press). Effects of music production on cortical plasticity within cognitive rehabilitation of TBI patients.

Who, & World Health, O. (2006). *Neurological disorders : public health challenges*

Wilson, B. A. (1999). *Case studies in neuropsychological rehabilitation*. New York: Oxford University Press.

Wittenberg, G. F. (2010). Experience, Cortical Remapping, and Recovery in Brain Disease. *Neurobiology of disease, 37*(2), 252. doi:10.1016/j.nbd.2009.09.007

Yin, R. K. (2014). *Case study research : design and methods* (5th ed. ed.). Los Angeles, Calif: SAGE.

Zasler, N. D., Katz, D. I., & Zafonte, R. D. (2007). *Brain Injury Medicine : Principles and Practice*. New York: Demos Medical Publishing.

Åstrand, R., & Romner, B. (2012). Classification of Head Injury. In T. Sundstrom, P.-O. Grände, N. Juul, C. Kock-Jensen, B. Romner, & K. Wester (Eds.), *Management of Severe Traumatic Brain Injury: Evidence, Tricks, and Pitfalls* (pp. 11-16). Berlin, Heidelberg: Springer Berlin Heidelberg.