

We are IntechOpen, the world's leading publisher of Open Access books Built by scientists, for scientists

6,100

Open access books available

150,000

International authors and editors

185M

Downloads

Our authors are among the

154

Countries delivered to

TOP 1%

most cited scientists

12.2%

Contributors from top 500 universities



WEB OF SCIENCE™

Selection of our books indexed in the Book Citation Index
in Web of Science™ Core Collection (BKCI)

Interested in publishing with us?
Contact book.department@intechopen.com

Numbers displayed above are based on latest data collected.
For more information visit www.intechopen.com



Chapter

Music as a Psychosocial Intervention with People Suffering from Schizophrenia: Challenges in Practice and Research

Inge Nygaard Pedersen, Lars Ole Bonde, Niels Jørgensen Hannibal, Charlotte Lindvang, Silvia Beatriz Jensen and Lars Rye Bertelsen

Abstract

In this chapter, we will present and reflect on challenges concerning clinical experiences and research within the area of music therapy as a psychosocial intervention for people suffering from schizophrenia. Two manuals for applying music therapy activities in two conditions in a research study were developed. The manual for the experimental group is based on intervention guidelines as a tool of engagement and regulation for the patient suffering from schizophrenia—simultaneously emphasizing an awareness of the position regarding closeness/distance and listening attitudes concerning the music therapist. Short descriptions of international research in the form of Cochrane- and meta-reviews will follow with an emphasis on presenting formulated needs in design developments for future studies. The description of a new Danish assessor- and patient-blinded randomized, controlled trial regarding music therapy vs. music listening for negative symptoms in schizophrenia will follow. We aimed at including these formulated needs of design development in the study, and in this chapter, we identify and describe different kinds of challenges emerging through our study, and we give some suggestions on how to cope with these. Finally, we discuss the complexity of doing controlled trials and using blinded research designs with this vulnerable population.

Keywords: music therapy, psychosocial intervention, schizophrenia, challenges in clinical practice, challenges in evidence-based research

1. Introduction

Music applied as a tool for rehabilitation and psychotherapy has grown very much during the last 50 years worldwide. Music therapy as a professional academic discipline is a training offered in almost every country around the world.

Music therapy can be performed in an active or a receptive form. In active music therapy, music improvisation can be used as a means of symbolically expressing emotions, sensations, and memories through which clients can gather personal insight

and develop coping strategies. These same emotions, sensations, and memories can be evoked by guided music listening, thus hereby facilitating multi-modal imagery also potentially leading to personal insight. Often emotions are dealt with that human beings for some reason are not able to express through words. The use of music can further be a way of regulating arousal, reducing pain or alleviating insomnia, where music is applied as music medicine.

In this chapter, we will focus on music therapy as a means to reduce negative symptoms of schizophrenia such as social withdrawal, low motivation, and poor ability for contact and communication. The client population suffering from such negative symptoms is often chronically ill, and their quality of life is strongly reduced by the symptoms. Very few studies have investigated treatment possibilities for these symptoms, even if there is a correlation between negative symptoms and reduction in quality of key areas of life [1].

We will further focus on challenges for music therapists in clinical practice experienced through many years with this population and challenges in an evidence-based research study carried out in Denmark from 2016 to 2020. We will offer some reflections and solution ideas to these challenges and compare our study with similar previous studies presented in meta- and Cochrane reviews.

2. Challenges in clinical practice to be mirrored in a manual

2.1 Challenges in clinical practice

When offering music therapy to people suffering from schizophrenia with predominantly negative symptoms, it is not sufficient to be professional about applying music as a tool for symbolically expressing or evoking emotions, sensations, and memories. The music therapist also needs to be professional about obtaining contact or dialogs often at a very basic level. The music therapists must be extra aware of how they are present in the room—how they are listening, and which positions they take in the interplay, and most importantly, the timing of eventual shift in positions.

Danish music therapists have written about different stages in the treatment process, that the therapist needs to be aware of [2–4]. Examples can be: If the client accepts to participate in music therapy, it is often easy to motivate the client to play on an easily accessible music instrument such as a xylophone or a percussion instrument. But establishing a mutual interplay situation can be a big challenge. We have experienced clients who stop playing if they hear somebody else play at the same time or clients who are not able to listen to the music of someone else outside their own musical space. One possible intervention for the music therapist is to listen carefully and to reinforce the music of the client in a close imitation, so that the client does not even notice that he/she is imitated. This will provide no disturbances for the clients' musical space. Noticing this can be done meaningfully in musical interplay but would present quite meaningless in verbal interplay. Gradually, in such a first phase of starting interplay, the therapist can move from a position of imitation to a position of matching, from where the therapist can try out some enticing and calling musical techniques to try to be allowed to enter the musical world of the client. Most often the client allows short interruptions in his/her ongoing music expressions—often without starting or ending points or dynamical changes. These short interruptions can give the therapist an idea of how the client reacts to disturbances, but mostly the client quite quickly returns to the safe private music space, where no one is allowed to enter. Often

the therapist has to give up on being allowed to enter the music of the client in the first phase of music therapy and needs to stay in a position of matching the client musically. In matching, you stay close to certain elements of the client's music such as dynamics and rhythm, but may apply other sound colors or instruments at the same time.

In a second phase of music therapy, the music therapist can be more holding than matching—this means that the therapist can support the music of the client in different ways such as grounding and framing and—leave the soloist position to the client. In this phase, it is not so much a question of being allowed to enter the music of the client—it is more about extending the expression of the client either with smooth music ornamentation or by supplying the music with a rhythmical or tonal center, from where the client can play further in his/her way. The interplay is still fully on the premises of the client, but the client allows music accompaniment to take place. It can provide a resonance of feeling all alone by the therapist, which again can be a counter-transference feeling toward the client's transference [5–7].

In a third phase of the music therapy—with the right timing (when the client is ready), the therapist can consciously try to disturb the music of the client, take a more contrasting role, and encourage and provoke the client to react to these contrasts. This phase often provides breakthrough experiences for the client, who often reacts quite dynamically as if being drawn out of a safe bubble where well-known patterns are left behind. A real interplay can occur in the here and now. It might be only for less than a minute, and the client may regret it afterward and ask for such experiences not to be repeated. It is audible though in the musical interplay in a fourth phase, that the client is more present in the music—more listening to others and there is a more equal, playful and independent interplay in the therapist/client dyad although the music can still float together.

2.2 Creating a manual mirroring clinical challenge

In creating a manual for a research study for this population, clinical experiences as presented above and many other experiences need to be mirrored in the structure of the manual. We were inspired by [8], who suggest guiding principles rather than factual descriptions in a manual for complex interventions. We were also inspired by [9], who recommend a four-level structure, which has already been applied by other music therapists such as [10–12].

The four levels consist of the following: (1) Unique and Essential Therapeutic Principles (principles that are central and defining), (2) Essential but not Unique Therapeutic Principles (principles that are also essential to other methods), (3) Acceptable but not Necessary Therapeutic Principles (principles that are not essential or defining to a certain approach in music therapy), and finally (4) Not Acceptable—Proscribed Therapeutic Principles (principles that are strongly contradictory to this approach).

2.2.1 The manual for the experimental group

For our study, we reflected that the manual for the experimental group (group I), performed by an educated music therapist unknown to the participant, should be flexible for clinical practice and there should be a possibility of multiple choices of music therapy techniques tailored to the need of the single client. Thus, the principles were mostly guiding toward a certain awareness of distance and closeness in the presence of the therapist and awareness of the different needs of the client in different phases of

the therapy process. Moreover, in the manual, the therapist is guided to not push the client and at the same time being sensitive to activation possibilities. Further, guiding principles concerned building alliance at a safe tempo for the participant, keeping stable frames and awareness of being both inviting for sharing problems, and simultaneously being supportive toward resources emerging in the therapeutic relationship. Following are examples of the therapeutic principles at level 1 and 4:

1) Unique and Essential Principles

- Switching between closeness and distance in the therapist/client relationship in an awareness of the right timing.
- Considering the negative symptoms as something “between us.” This between us can in the right timing be due to mutual investigation—being investigative, resonant, and aware what the symptoms are eventually expressing.

and

4) Not Acceptable—Proscribed Principles sound:

- Being guided solely by methodological or theoretical perspectives without involving the perspective of the client and the current relationship.
- Being judgmental or dismissive of the participant’s experience of the world.

2.2.2 The manual for the control group

For the control group (group II), our rationale for the music listening condition was that we wanted an active offer of intervention for both groups. We did not want the study to examine music therapy added to treatment as usual versus treatment as usual alone as has been mostly applied in research sources involving this population. Moreover, for ethical reasons, we did not want half of the clients to face challenging screening procedures without being offered an intervention. We decided to offer group II music listening to playlists developed by music therapists, where the intervention is performed by a caregiver unknown to the participant. The caregivers, performing group II intervention, were instructed by music therapists on how to apply the playlists in an App called *The Music-Star* [13]. The caregivers trained for this intervention all needed previous experiences in working or being with the population under investigation. We also wanted a condition for group II including music as our study was blinded for participants and screening nurses. Thus, one of the possible activities in the music therapy group I became the only possible music activity in group II. This condition created a situation where we could name both conditions as music therapy activities—and inform the participants that we were examining two different music therapy interventions.

All performers of interventions in group I and group II were called therapists, and all interventions took place in the same locations equipped for music therapy and with a firm weekly meeting time. We also formulated that the therapist performing group II should not be allowed to actively build a therapeutic alliance and should not enter a therapeutic dialog. The therapist should solely listen to the client without verbal interventions.

For this group II condition, we did not apply all four therapeutic principles in the same form as for the group I condition. We simply applied three short principles:

(1) You must, (2) You can, (3) You are not allowed to, as presented in the following examples from level 1 and level 3:

1) You must:

- 1. Be motivating and firm around listening to music from the playlists (The Music-Star App). Music listening should preferably take place in each session.
- Apply “prepared ready answers” if asked about your profession/role (from the list of ready answers).

3) You are not allowed to:

- Actively ask about the participant’s current life situation or life story. If the participant takes an initiative to share life events, do listen in an engaged manner, but do not offer to clarify or confront comments or answers.
- Perform music actively (sing or play) alone or together with the participant.
- Talk with the participant about how she/he is influenced by or experiences the music.

Thus, we could be rather flexible with the two intervention conditions and give some space for the therapist to meet the need of the participants in different ways. Simultaneously, we needed to be rigor with our research design as this is demanded in the Danish health system, but it is also asked for in meta-reviews of previous research studies with this population.

3. Challenges in developing a research design as mirrored in the results

3.1 Challenges in developing a research design

In 2015, when we planned to establish a research study in Denmark examining the possibility of reducing negative symptoms of people suffering from schizophrenia through music therapy, we were inspired by recommendations presented in previous Cochrane reviews such as [14, 15]. During our study, similar and further recommendations were emphasized in several meta-reviews that supported our choices concerning a rigorous design among others [16–19]. The recommendations included: (1) applying a more rigorous research design than had been the case in previous studies, (2) applying an active control condition, not solely measuring music therapy added to treatment as usual versus treatment as usual alone, (3) distinguishing between primary and secondary negative symptoms, (4) clarifying the music therapy condition and who would be performing the intervention.

Therefore, we developed a randomized, controlled, assessor- and patient-blinded trial, which was carried out from 2016 to 2020, after having developed the protocol design during 2015. Based on power calculation, we aimed at a minimum of 90 and a maximum of 120 participants. This study was a collaboration between music therapy researchers from Aalborg University and psychiatrists from Aalborg University Hospital, Psychiatry. Our aim of the study is clarified in the following citation:

“The ambition in the present study was to apply a rigorous research design with manualized interventions, standardized outcomes and an active control condition, in order to reduce the risk of observing Hawthorne effects when studying adjunct music therapy. We further established a blinded condition and ensured that all potential participants received the same information ...” [20] p. 6.

We decided to develop our research design as similar as possible to a medical study design, well aware that this was an ambitious task with this vulnerable population.

As already mentioned, we created a control condition including music, and we even ensured blinding for the participants and the assessors (project nurses). The blinding seemed to be successful, as only three participants from group II expressed that they did not get real music therapy, and they all dropped out during treatment. The design included a big number of measurement tools, which showed to be challenging for the participants.

3.1.1 Measurement tools

We applied two standardized tools for measuring symptoms of schizophrenia—both negative and positive, namely the Positive and Negative Syndrome Scale (PANSS) [21], where we focused on four items of the negative subscale: Blinded affect N1; Emotional withdrawal N2; Poor rapport N3; Passive/apathetic social withdrawal N4; The subscale had to show 4 or >4 on two of those parameters for the participant to be included.

The positive subscale 1–7 had to show no higher than 28 in total for the participant to be included in the study. We also applied the Brief Negative Symptom Scale (BNSS) [22] to have a broader sense of the symptoms. We included two further scales to ensure that primary negative symptoms—not secondary negative symptoms such as depression or side effects from medication—were present, namely the Calgary Depression Scale [23] for Schizophrenia (CDSS) and the UKU scale [24] measuring general effects of side effects induced by treatment with antipsychotics. UKU is an acronym for the Danish name “Udvalg for Kliniske Undersøgelser” (Task Force for Clinical Investigations).

Other measurement tools applied were the Global Assessment of Functioning (GAF), WHOQOL-Bref (Quality of Life), and Helping Alliance Questionnaire, patient version (Haq-II).

The high number of measurement tools provided that every screening procedure lasted a minimum of 1.5 hours. The participants were screened before inclusion, after 15 sessions and after 25 sessions. The Helping Alliance Questionnaire was applied also after session 5 but not before inclusion.

For further information on the different measurement tools, see [25].

3.1.2 Other inclusion and exclusion criteria

The participants included were aged 18–65, and they had to have a diagnosis of schizophrenia stated (ICD-10, F20) more than 2 years ago. To be included they could not have had a change in medicine within the last month or have been hospitalized within the last 3 months. A significant drug dependency, conflicting with participation in the study, could also lead to exclusion. Finally, potential participants were not allowed to have received individual music therapy within the last 2 months. This last criterion was based on a direct translation of a criterion from medical studies. Normally it takes 2 months to eliminate the effect of medicine, and this effect needs to be eliminated to ensure that the new trial is not influenced by previous medicine (here in the form of individual music therapy).

When participants were included in the study and randomized to one of two intervention arms, they could be excluded if they were absent from more than five of the 25 sessions or if more than 30 days passed between two sessions. They could also be excluded if a significant shift in medicine was needed during the trial or if they were hospitalized for more than 3–4 days. In all cases when a participant did not turn up for a session and had not canceled before the session, the therapist phoned the participant to ensure that they were OK with the choice of not attending the session. All therapists actively gave notice to the participants, if they had been absent for four or five sessions, that they should be aware that another absence would result in exclusion from the study.

Twenty-five sessions of interventions in both groups were chosen based on previous research [26], that the dose-response effect of music therapy in work with clients with low motivation and complex symptoms is higher between 16 and 51 sessions and not so high between 3 and 10 sessions. We made a power calculation based on previous studies, stating a higher number than in several previous studies due to having a control group in this study. The calculation suggested min. 90 and max. 120 participants.

3.2 Challenges in recruitment processes

We planned a recruitment process stating that the researchers—primarily the principal investigator and the research coordinator—planned and performed several initial information meetings with institutions and institution units, where potential participants were living or a place they were visiting daily. As we searched for participants being diagnosed more than 2 years ago, we recruited solely outpatients at hospitals or social institutions. We planned to identify one contact person among the staff at each institution/unit, and we intended to instruct this person comprehensively on how to inform and encourage potential participants. The research coordinator would keep a weekly telephone contact with all informants, but we soon realized that this procedure did not work.

Two challenges emerged during the recruitment phase: Firstly, it happened that the informants forgot to inform other team members or potential participants, or -if they informed other team members, these team members forgot the message as soon as they left the room. The team members of these institutions told us that they simply were overloaded with working issues and not always able to perform this new task, even if they were motivated to. Secondly, team members often had a protective attitude toward their clients. So, if they thought that a potential participant was not able to join 25 sessions of music therapy activities, they did not inform the client. We tried to solve these challenges by simply performing many more meetings at each institution and by being allowed to be connected directly with potential participants, and to answer all their questions and comment on their doubts. For some periods in the recruitment phase, the research task grew from a part-time job to a full-time job for the coordinator and the principal investigator—an extra expense not originally included in the research budget.

A third challenge in the recruitment process was the fact that we were not allowed to contact any staff member at any institution until a collaboration contract was signed by the head of a mental health center, often including many institutions. This procedure was very time-consuming, and more center managers did not want to sign such a contract, which meant that even if we aimed at performing a national study among all five regions in Denmark, we were not able to recruit in two out of five regions. One region was not a possibility as no music therapists were working in mental health institutions in this region at the time of the project. In the end,

only two regions signed a contract. In some regions, the healthcare institutions were overloaded by problems from just having a new electronic online journaling practice installed, which caused heavy problems for the daily work of all healthcare professionals, and we unfortunately started our study at the same time. As we were not able to counter these challenges, we limited our study to two regions, which again gave us fewer chances to obtain our estimated number of participants.

A fourth challenge was an unforeseen quick shift of staff members working in mental health, which took place at several institutions in Denmark in the years of the study. For this study, it meant that instead of one psychiatrist researcher, three psychiatrist researchers became involved in the study during the years. We were only allowed to recruit when a psychiatrist researcher was involved, so these transitions from one psychiatrist researcher to the next created longer phases during the study, where we were not able to recruit. It was an important lesson to witness how influential structural elements as described above can influence the recruitment process and prolong the study.

3.2.1 Challenges in the inclusion screening procedure

When a potential participant showed interest in the study, the local contact person would reach out to the research coordinator. The coordinator aimed at collecting at least three participants or more to arrange a screening meeting with our two project nurses—mostly at the institution of the participants so it could take place at a familiar place for the potential participants. These screening procedures thus involved traveling and sometimes staying overnight for the project nurses. We, therefore, decided to deviate from the original plan that the same two project nurses should do all screening procedures to ensure screening compliance and trained and included more project nurses living in another Region. The two original project nurses further trained five accessors during the study period.

A total of 199 participants showed interest in the study for whom a screening procedure was planned. A huge challenge emerged already here, where 62 of those clients either did not turn up or withdrew their consent during the screening procedure. Participants were offered a taxi for traveling to and from the procedure, and we planned the procedure to take place close to where potential participants were living. Before the start of the screening procedure, they were informed by the project nurse about the project and the screening procedure and—among others about the fact that a video recording of 20 minutes was part of the screening procedure to ensure screening validity. Especially this part of the screening procedure caused problems for several potential participants. Further, they had to sign an informed consent form “to provide allowance to receive information of diagnosis, medical information, and hospitalization history of the single participant. If this is not possible, the client cannot be included in the study.” [25]. So many factors could provide that the potential participant became insecure or regretted just before or during the planned screening procedure.

Seventy-seven potential participants were not included even if they went through the screening procedure. We can identify some factors causing this challenge. Firstly, in the beginning, mostly clients with an interest in music were referred as their contact person interpreted that this had to be a condition. This happened even if we emphasized very clear at all information meetings that we were searching for participants with negative symptoms and that they did not need to have an interest in music. Secondly, many participants wanted to give the screening project nurse a positive picture of their abilities. As an example, if they were registered for activities that they

never attended, they answered questions about these activities as if they were joining them and thus did not meet the criteria of the sum of negative symptoms.

The first challenge listed here was resolved when the researchers themselves gradually were allowed to have the direct information task with the potential participants. The second challenge we solved by the screening nurse starting to tell the potential participant before the start of the screening that the screening was not about giving a positive but a realistic picture of oneself. We lost a further three included participants before randomization, because one was moving to another town in Denmark, and two participants withdrew their consent after inclusion but before randomization. Thus, we ended up with 57 included participants.

For each participant being included and randomized to one of two interventions, the coordinator had to connect the participant with one of our 13 therapists at a location as close as possible to the living place of the participant. All together 10 locations were equipped for music therapy activities. If more than 2 weeks passed from the screening date to the first intervention date, the participant had to go through a new screening procedure. This criterion illustrates how quickly symptoms can change within this population, and that each screening procedure is a picture of the here and now situation for the participant.

The coordinator collected session schedules filled in by each therapist and organized all screening procedures ensuring they were performed after 15 and after 25 sessions. The Haq-II questionnaire was filled out after 5, 15, and 25 sessions, performed by either the research coordinator or the principal investigator. The principal investigator performed all semistructured interviews after 1 month follow-up.

3.3 Challenges in design and recruitment as mirrored in the results

In total, 57 participants were randomized (28 in group I and 29 in group II). We did not meet the aim of power calculation. Of these participants, 39 completed the first 15 sessions (25 in group I and 14 in group II) and 29 completed all 25 sessions (17 in group I and 12 in group II).

The Demographics of study participants did not show differences in duration of illness, age at inclusion, PANSS negative subscale, sex, substance misuse, schizophrenia subtype, and education (**Table 1**).

At baseline we observed no difference between groups in any of the measurement tools (PANSS total score, PANSS subscale scores, BNSS total score, BNSS subscale scores, CDSS, GAF, WHO-QoL total score, and Haq II total score) (**Table 2**).

PANSS, positive and negative symptom scale; BNSS, brief negative symptom scale; GAF, global assessment of functioning; WHO-QoL, World Health Organization quality of life; HAQ II, Helping Alliance Questionnaire (Patient version II); CI, confidence interval.

Our primary outcome was stated as the results of the PANSS negative subscales—total scale, and as a result, we found no significant differences between the two groups. Surprisingly both intervention groups showed a significant reduction in negative symptoms from baseline to 25 weeks of treatment.

Both **Figures 1** and **2** were first edited by Frontiers in Psychiatry. Clinical Trial, published 21. December 2021. doi: 10.3389/fpsyt.2021.738810. Unfortunately, an error in the data recording has been detected since this publication, changing the number of Music Listening, 25 weeks to 12 instead of previously 13 in both figures. This error does not influence the result.

	Music therapy (n = 28)	Music listening (n = 29)	p-value
Sex^a			
Male	18 (66.7%)	16 (57.1%)	0.6
Age at baseline ^b	40.7 (13.2)	36.5 (11.3)	0.2
Duration of illness ^b	9.0 (7.9)	7.0 (8.7)	0.5
Education^a			0.3
Law-mandated school	7 (25.0%)	6 (20.7%)	
Grammar school (gymnasium or similar)	8 (28.6%)	10 (34.5%)	
Short vocation-oriented courses	5 (17.9%)	2 (6.9%)	
Vocational/apprenticeship training	4 (14.3%)	8 (27.6%)	
University training	1 (3.6%)	3 (10.3%)	
Other	1 (3.6%)	—	
Schizophrenia subtype^{a,c}			0.6
Paranoid Schizophrenia	17 (73.9%)	19 (70.4%)	
Hebephrenic schizophrenia	1 (4.3%)	—	
Undifferentiated schizophrenia	3 (13.0%)	5 (18.5%)	
Simple schizophrenia	1 (4.3%)	—	
Remaining subtypes	1 (4.3)	3 (11.1%)	
Misuse of alcohol or substances ^a	1 (3.6%)	1 (3.4%)	> 0.9

^aFrequency (%); p-value from Fisher's exact test.
^bMean (SD); p-value from two-sided t-test.
^cSchizophrenia subtype data were missing for seven participants.

Table 1.
Demographics of study participants.

	Intervention I		Intervention II	
	Mean	95% CI	Mean	95% CI
PANSS total	73.9	(69.0–78.8)	68.6	(65.1–72.1)
PANSS negative subscale	23.4	(21.7–25.1)	23.4	(21.4–25.4)
PANSS positive subscale	15.6	(13.6–17.7)	13.7	(12.3–15.1)
PANSS general subscale	34.9	(31.8–38.0)	31.5	(29.2–33.8)
BNSS total	37.4	(33.9–41.0)	36.2	(32.4–40.0)
BNSS anhedonia subscale	10.4	(9.4–11.4)	10.2	(9.0–11.4)
BNSS distress subscale	2.4	(1.8–2.9)	1.6	(0.9–2.2)
BNSS asociality subscale	5.5	(4.6–6.3)	5.2	(4.5–5.9)
BNSS avolition subscale	6.5	(5.8–7.1)	6.5	(5.7–7.2)
BNSS blunted affect subscale	7.9	(6.6–9.1)	7.9	(6.4–9.5)
BNSS alogia subscale	4.9	(3.8–6.1)	4.9	(3.9–5.8)
Calgary depression scale for schizophrenia	3.2	(2.1–4.3)	3.7	(2.9–4.4)
GAF	39.4	(36.4–42.3)	41.3	(38.7–43.8)
WHO-QoL total score	77.0	(71.8–82.1)	76.8	(71.8–81.8)

	Intervention I		Intervention II	
	Mean	95% CI	Mean	95% CI
WHO-QoL physical health domain raw score	20.8	(18.8–22.7)	21.9	(19.9–23.9)
WHO-QoL psychological domain raw score	15.6	(13.9–17.4)	14.3	(12.6–15.9)
WHO-QoL social relationships domain raw score	9.0	(8.4–9.7)	9.4	(8.5–10.3)
WHO-QoL environment domain raw score	24.9	(22.9–26.8)	26.0	(24.6–27.3)
HAQ II Helping Alliance Questionnaire	5.0	(4.6–5.3)	4.7	(4.4–5.1)

Table 2.
 Baseline scores of study participants.

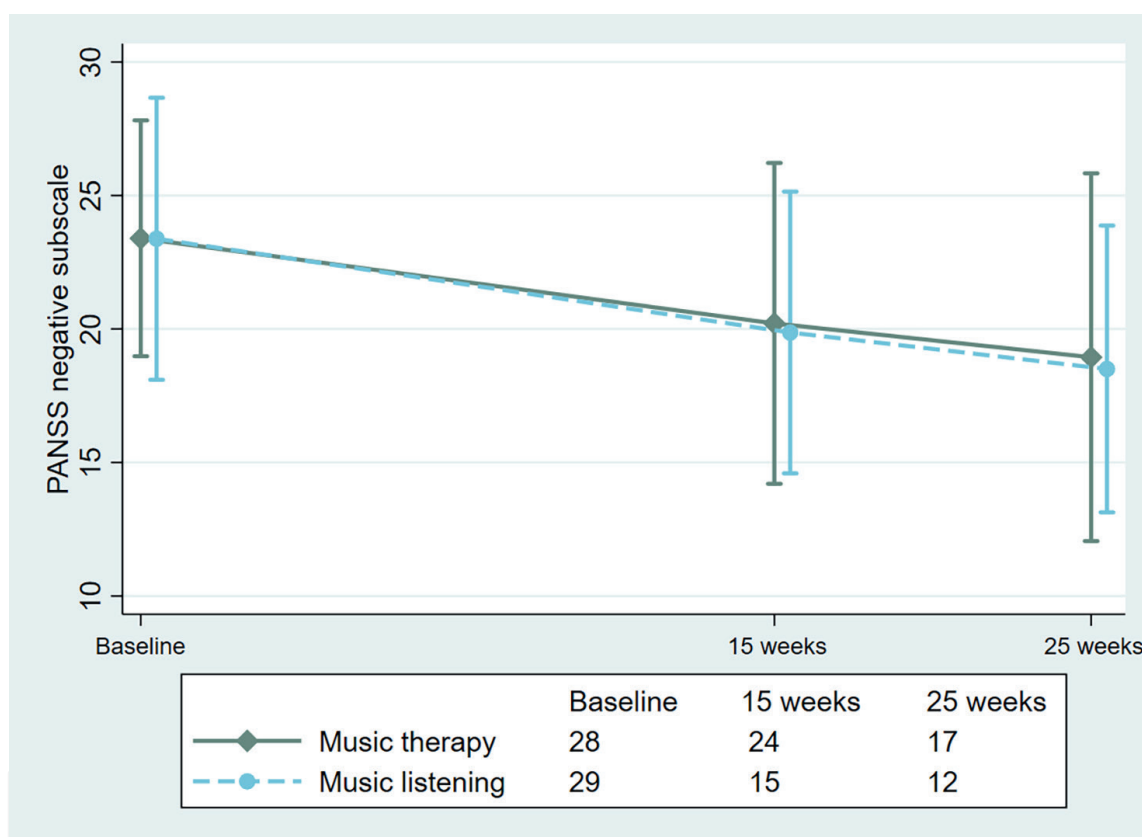


Figure 1.
 Changes in positive and negative syndrome scale (PANSS), negative subscale in the intention to treat population.

A qualitative analysis of the semistructured interviews, performed after 1 month after termination of 25 sessions, is under elaboration. We will bring a few citations from those interviews at the end of this chapter. We think the challenges addressed in this chapter are all elements providing the high dropout rate we had to face in the study.

3.3.1 Discussion on challenges mirrored in the results

After completing this study, the question is how we can understand the results in the light of the challenges of the study?

First, we were aware that applying a study design, as close to a medical design as possible for this vulnerable population, is bound to cause challenges. We were prepared for this but not for such big scale challenges. We were prepared that some

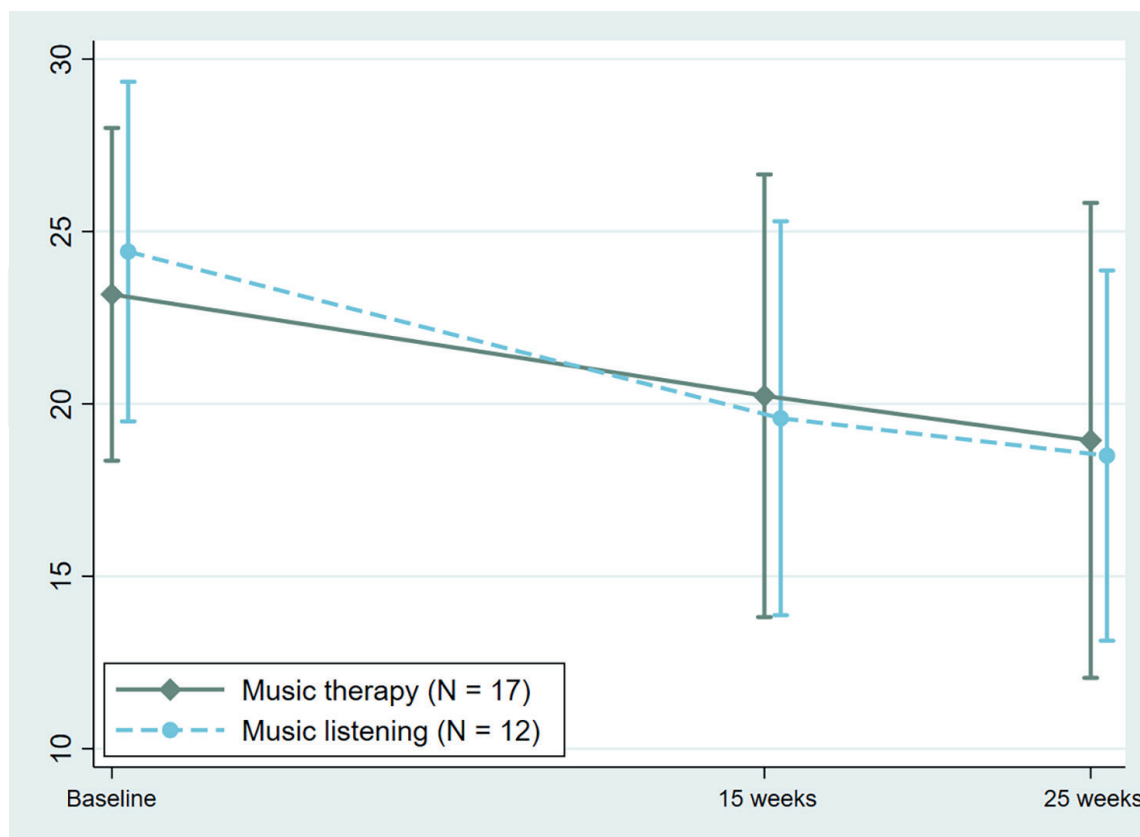


Figure 2. Changes in positive and negative syndrome scale (PANSS), negative subscale in the completer's population.

potential participants would either not show interest or might regret just before the initial screening procedure; but we were not prepared for such a high number of screening failures. This fact can reflect that the protecting attitude of some staff members seems realistic. On the other hand, we also had participants completing screening, where the team members told us, that they did not think the participant could turn up for any session, but the participant eventually completed all 25 sessions. Retrospectively, the results may reflect that the screening procedures were too comprehensive, and that too many measurement tools caused challenges, and further, that 25 sessions may have been a bit scary to face before start for some potential participants. Simultaneously, we initially agreed that we wanted to meet the demands for more rigorous designs. Seen in the light of the estimated power calculation, we recruited very few; but seen in the light of the design applied, we have had reactions from professionals working with this population who were surprised that we were able to include 57 participants.

The outcomes of the study in our opinion mirror that this population does change rather quickly in mood and in showing courage, and they seem to easily be comprehensively influenced by these changes.

Research shows that negative symptoms provide problems in treating people suffering from schizophrenia, as psychopharmaceuticals and other treatment are only effectual to a lesser extent for this patient population [1, 27]. From this perspective, we think it is positive that the study shows a significant reduction of negative symptoms for both groups.

An important finding was that both interventions showed improvement in the level of negative symptoms for the participants, who were able to participate in the final

assessment after 25 sessions. The data do not reveal what parameters predict the profile of the participants, who would profit from each of the two interventions. The underpower of the study is also important in this respect, as a larger number might have changed the between group outcomes. Some clients benefitted more from music therapy, where several techniques were applied, and the therapist aimed to tailor the process of the case to the needs of the client. This is a more active intervention, where the relationship between the therapist and the client is an important part of the treatment process. Other clients benefitted more from being in a location with a carefully listening person, with no demands of being active other than choosing some music from the playlist to listen to. This intervention form can be seen more like a music activity, where the building of alliance is less important in the treatment process.

In the interviews, more participants joining group II expressed that it was important for them just to turn up and to listen to some supportive music—not being asked about anything. As there was a bigger number of dropouts in group II than in group I from session 1 to session 15 (4 in group I and 13 in group II), it seems possible that intervention II could not engage the participant at the same level as intervention I. Only participants who wanted no engagement (no disturbance), but who benefitted from just getting out of their home once a week, seemed to continue the treatment in group II. These reflections need further research studies, and we can just learn from the fact that the mood and motivation are changing quickly for some participants in the population under investigation, and that these changes seem to have a comprehensive influence on the mental state of the participants. We acknowledge the benefit of giving patients, who are chronically ill, a chance to get out of their homes and feel good about it.

The music playlists selected for group II—a special compilation of playlists, also available as one possible intervention for group I—are specifically chosen by two music therapy researchers, who, from certain parameters on the intensity of the music, divided playlists into three different categories: (1) supportive music, (2) supportive and challenging music, and (3) challenging music [28]. In the present study, only music from the supportive category was included in the app.

In Denmark, it has been a practice for some years that music therapists employed in mental health hospital institutions do instruct other staff members on how to apply the playlists on the app called “The Music-Star” [13]. These playlists are applied for several other tasks, e.g., to try to avoid coercion and belt fixation, or the playlists are applied for helping clients with insomnia or restlessness e.g. Ref. [29]. In this respect, the results just confirm that both practices, which are already present in some mental health institutions, having music therapists employed, can be beneficial for people suffering from schizophrenia with predominantly negative symptoms. Both interventions call for a music therapist as part of the team.

This study has given much indispensable knowledge and experience for us as music therapy researchers. We hope to be able to apply this knowledge in future research designs, in qualitative or mixed-method research designs in the mental health system. We also hope that these research methods will achieve the same recognition as quantitative evidence-based research concerning treatment possibilities. We hope that these methods—at least for complex diagnoses and symptoms—can be as beneficial for informing the health system, about which treatment possibilities should be recommended as standard care. Thus, not only treatment manuals, but also research study designs could be tailored more toward the realistic possibilities of the potential participants. We have learned from this study that the many measurement tools and long screening procedures

cause anxiety, insecurity, and dropout on a big scale. We recommend that future research in the field examines if other ways of gaining data could cause less dropout and still provide valid results.

As a final part of this paper, we want to give the word to the participants in the study. Without their contribution, none of these experiences would have been possible. These few citations are formulated by the participants during the semistructured interviews and translated by the authors:

- “I think it has reduced negative thoughts. It is helpful to just listen to music. I never thought of this before”.
- “It is a really good treatment offer. It basically helped me to cope with life. It did not permanently remove the symptoms. During treatment the weeks were much better – it went down again towards the next session and after the session, it went up again. It needs to be a permanent offer – this will make the process more fluently – then it can be adjusted along the road”.
- “I never thought that sitting and playing some piano keys could have any influence on one’s mood. It had a huge effect. I have been happy on the days when I could go for a session and be in a very good mood the rest of such a day – even during a winter depression. Normally months pass between such happy mood days, and suddenly I had a weekly happy mood day. I never expected I could join 25 weeks’ sessions – but I did!!!! Music can carry me out of the depressive part of me. This is necessary to act in life. The change in my state of being is slow, but it does move forward”.

4. Conclusion

To conclude, clients diagnosed with schizophrenia and suffering from predominantly negative symptoms—also in social psychiatry—can benefit from either music therapy or music listening to special selected music play lists—here through the App *Music-Star*.

As explained in the text, most participants dropped out before, during or just after the first screening procedure. More participants dropped out between baseline and 15 sessions in intervention II than in intervention I, which could indicate that intervention I can motivate more clients to stay in the treatment situation. Still, we anticipate that many more patients can benefit from both interventions, when not being demanded to go through long screening processes, and when music therapy is integrated in the institution. It seems to be a future assessment task for music therapists to distinguish, which clients within this population can benefit most from which of the two intervention offers described here.

Acknowledgements

We would first of all like to say thank you to all the participants, who made this study possible. And all the members of the research team including psychiatrists, project nurses, therapists, statisticians, and other researchers in the steering group. We are grateful to Aalborg University and Aalborg University Hospital, Psychiatry,

who supported this project throughout the many years. Finally, we want to thank the TRYG Foundation without whom we could never have performed this study. They gave us 400.000 euros to perform the study. Also, we want to thank the Obel Family Foundation, which provided money to equip some of the music therapy locations.

Conflict of interest

Lars Rye Bertelsen is coowner of the design rights for the Music-Star App. This app was developed in 2015–2016 in a joint venture between Aalborg University Hospital, Psychiatry, the private vendor AudioCura, ApS., and music therapists Helle Nystrup Lund and Lars Rye Bertelsen, who are both coowners of the design rights to the app. The remaining authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a conflict of interest.

Author details

Inge Nygaard Pedersen^{1*}, Lars Ole Bonde², Niels Jørgensen Hannibal¹,
Charlotte Lindvang¹, Silvia Beatriz Jensen³ and Lars Rye Bertelsen⁴

1 Aalborg University, Aalborg, Denmark


2 CREMAH, The Norwegian Academy of Music, Oslo, Norway

3 Private Practice, Aalborg, Denmark

4 Aalborg University Hospital, Aalborg, Denmark

*Address all correspondence to: inp@ikp.aau.dk

IntechOpen

© 2022 The Author(s). Licensee IntechOpen. This chapter is distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/3.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. 

References

- [1] SRT V, Schulte PF, de Hahn L. Treatment for negative symptoms in schizophrenia: A comprehensive review. *Drugs*. 2017;77:1423-1459
- [2] Jensen B. Musikterapi med skizofrene – refleksioner ud fra en case. (Music therapy with people suffering from schizophrenia – Reflections based on a case). *Musikterapi i Psykiatrien. Årsskrift 2, (Music Therapy in Mental Health. Vol.2)*. 2002;2:31-48. Available from: <https://journals.aau.dk//index.php/MIPO>
- [3] Lindvang, C: Musikterapeutens rolle i opbygning af psykoterapeutisk relation med skizofrene. (The role of the music therapist in building a psychotherapeutic alliance with people suffering from schizophrenia). *Musikterapi i Psykiatrien. Årsskrift 1. (Music Therapy in Mental Health. Vol. 1)* 1998;1:45-64. Available from: <https://journals.aau.dk//index.php/MIPO><https://journals.aau.dk//index.php/MIPO>
- [4] Pedersen, IN: Music therapy as holding and re-organizing work with schizophrenic and psychotic patients. In: Wigram T, De Backer J, editors. *Clinical Applications of Music Therapy in Psychiatry*. London: Jessica Kingsley Publishers; 1999. pp. 24-44
- [5] Pedersen IN. Counter transference in music therapy. A Phenomenological study on counter transference used as a clinical concept by music therapists working with musical improvisation in adult psychiatry [Dissertation]. Aalborg University; 2007. Available from: <https://www.mt-phd.aau.dk/phd-theses/>
- [6] Pedersen IN. Musikterapeutens disciplinerede subjektivitet. (The disciplined subjectivity of the music therapist). *Music and Psychology. Psyke & Logos*. 2007;28(1):358-384
- [7] Pedersen IN. En fænomenologisk undersøgelse af modoverføring i musikalsk improvisation i voksenpsykiatrien. En praksisbaseret og praksisrelateret forskningsundersøgelse. (A phenomenological examination of counter transference in musical improvisation in adult psychiatry. A practice based and practice related research study). *Musikterapi i Psykiatrien. Årgang 5 (Music therapy in mental health. Vol. 5)*. 2008;5:30-46. Available from: <https://journals.aau.dk//index.php/MIPO>
- [8] Hawe P, Shiell A, Riley T. Complex interventions: How “out of control” can a randomised controlled trial be? *BMJ*. 2004;328(7455):1561-1563
- [9] Waltz J, Addis ME, Koerner K, Jacobson NS. Testing the integrity of a psychotherapy protocol: Assessment of adherence and competence. *Journal of Consulting and Clinical Psychology*. 1993;61(4):620-630
- [10] Rolvsjord R, Gold C, Stige B. Research rigour and therapeutic flexibility: Rationale for a therapy manual developed for a randomized controlled trial. *Nordic Journal of Music Therapy*. 2005;14(14):15-32. DOI: 10.1080/08098130509478122
- [11] Hannibal NJ, Pedersen IN, Bertelsen LR, Dammeyer C, Lund HN. Manual for procesorienteret musikterapi for personer med BPD. (A manual for process-based music therapy for persons suffering from BPD). *Musikterapi i Psykiatrien Online (MIPO)*. 2012;7(2):64-80. DOI: 10.5278/ojs/mipo/401ctlm2
- [12] Geretsegger M, Holck U, Bieleninik L, Gold C. Feasibility of a

trial on improvisational music therapy for children with autism spectrum disorder. *Journal of Music Therapy*. 2016;**53**(2):93-120

[13] Lund HN, Bertelsen LR, Bonde LO. Sound and music interventions in psychiatry at Aalborg university hospital. *SoundEffects*. 2016;**6**:48-68. DOI: 10.7146/se.v6i1.24912 26

[14] Gold C, TO H, Dahle T, Wigram T. Music therapy for schizophrenia or schizophrenia-like illnesses. *Cochrane Data Base Systematic Reviews*. 2005;**18**(2):CD0040025

[15] Mössler K, Chen X, TO H, Gold C. Music Therapy for People with Schizophrenia and Schizophrenia-like Disorders. The Cochrane Collaboration. Hoboken, NJ, USA: John Wiley & Sons Ltd.; 2011. DOI:1002/14651858. CD004025

[16] Lutgens D, Garipey G, Malla A. Psychological and psychosocial interventions for negative symptoms in psychosis: Systematic review and meta-analysis. *The British Journal of Psychiatry*. 2017;**210**:324-332. DOI: 10.1192/bjp.bp.116.197103

[17] Tseng PT, Chen YW, Lin PY, Tu KY, Wang HY, Cheng YS, et al. Significant treatment effect of adjunct music therapy to standard treatment on the positive, negative, and mood symptoms of schizophrenic patients: A meta-analysis. *BMC Psychiatry*. 2016;**16**:16. DOI: 10.1186/s12888-016-0718-8

[18] Geretsegger M, Mossler KA, Bieleninik L, Chen XJ, Heldal TO, Gold C. Music therapy for people with schizophrenia and schizophrenia-like disorders. *Cochrane Database of Systematic Reviews*. 2017;**5**:CD004025. DOI: 10.1002/14651858.CD004025.pub4

[19] Jia R, Dandan L, Jingfen Y, Guangl L, Zihu W, Zhen W, et al. The effectiveness

of adjunct music therapy for patients with schizophrenia: A meta-analysis. *Psychiatry Research*. 2020;**293**:3464. DOI: 10.1016/j.psychres.2020.113464

[20] Pedersen IN, Bonde LO, Hannibal Nielsen J, Aagaard J, Gold C, Bertelsen LR, et al. Music therapy vs. music listening for negative symptoms in schizophrenia: Randomized, controlled, assessor- and patient-blinded trial. *Frontiers in Psychiatry*. 2021;**12**:738810. DOI: 10.3389/fpsy.2021.738810

[21] Kay SR, Fiszbein A, Opler LA. The positive and negative syndrome scale (PANSS) for schizophrenia. *Schizophrenia Bulletin*. 1987;**13**:261-276. DOI: 10.1093/schbul/13.2.261

[22] Kirkpatrick B, Strauss GP, Nguyen L, Fischer BA, Daniel DG, Cienfuegos A, et al. The brief negative symptom scale; psychometric properties. *Schizophrenia Bulletin*. 2011;**37**:300-305

[23] Addington D, Addington J, Maticka-Tyndale S. Assessing depression in schizophrenia: The Calgary depression scale. *The British Journal of Psychiatry*. 1993;**163**(Suppl. 22):39-44. DOI: 10.1192/S0007125000292581

[24] Lingjaerde O, Ahlfors UG, Bech P, Dencker J, Elgen K. The UKU side effect rating scale. A new comprehensive rating scale for psychotropic drugs and a cross-sectional study of side effects in neuroleptic treated patients. *Acta Psychiatrica Scandinavica*. 1987;**76**:1-100. DOI: 10.1111/j.1600-0447.1987.tb10566.x

[25] Pedersen IN, Bonde LO, Hannibal NJ, Nielsen J, Aagaard J, Bertelsen LR, et al. Music therapy as treatment of negative symptoms for adult patients diagnosed with schizophrenia-study protocol for a randomized, controlled and blinded study. *Medicine*. 2019;**646**:46. DOI: 10.3390/medicines6020046

[26] Gold C, Solli HP, Krüger V, Lie SA. Dose-response effect for music therapy for people with serious mental disturbances. Systematic review and meta-analysis. *Clinical Psychology Review*. 2009;**29**:193-207

[27] Simonsen E, Lyse HG, Hansen AO, Knudsen P. *Om Og Med Psykoser. (About Psychosis)*. Copenhagen: The Psychiatry Foundation's publishing house, PsykiatriFondens Forlag; 2001

[28] Wårja M, Bonde LO. Music as co-therapist: Towards a taxonomy of music in therapeutic music and imagery work. *Music and Medicine*. 2014;**6**:16-27

[29] Lund HN, Pedersen IN, Johnsen SP, Heymann-Szlachcinska A, Tuszewska M, Bizik H, et al. Music to improve sleep quality in adults with depression-related insomnia (MUSTAFI): Study protocol for a randomized controlled trial. *Trials*. 2020;**21**(1):1-10