Music therapy for patients suffering from chronic pain –
Evaluation of an interdisciplinary treatment approach

Thomas Hillecke¹, Anne Nickel¹, Hubert J. Bardenheuer², Hans Volker Bolay¹
¹ German Center for Music Therapy Research
² Pain Center of the University Hospital Heidelberg
Music therapy concept

- **Individual music therapy sessions** in addition to medical treatment
- **20 units** of treatment 50 minutes weekly
- **Manualized** therapy concept
- **Multidisciplinary case supervision**
Research methods

• **Effectiveness study**
  Prospective, controlled, randomized design

• **Pain measures**
  SES, VAS

• **Psychotherapeutic outcome measures**
  OQ 45.2
  pre-post measurement, process measurement
  (pre, 4, 10, 16, post)

• **Methods of reliable change**
  VAS: minimum 20% Change
  OQ45.2 und SES: critical difference

• **Methods of clinical significance**
  VAS: light pain (30% or less)
  OQ45.2: clinical „Cut-off”
  (58,8 points according to the German manual)
  SES: less pain than 75% of the manual patients

➤ **Statistics**
  t-Test, covariance analysis, Mantel-Haenszel-Chi²-Test, Mann-Whitney-U-Test
**Design**

**Total group**
- Music therapy and medical pain treatment
- pre-post-comparison (n=31, 68% female)

**Experimental vs. waiting group**
- Music therapy and medical pain treatment (n=21, 67% female)
- Patient group awaiting therapy medical pain treatment only (n=19; 74% f)

**Patients in the waiting group**
- then in music therapy (n=10, 70% f)

**Criteria for inclusion**
- Chronic pain
- Pain-related emotional and psychological problems
- Positive motivation for therapy

**Criteria for exclusion**
- Tumor-related pain
- Psychiatric illnesses
- Age < 18
- Ongoing psychotherapeutic treatment at the time of trial
Outcome Definition

Combination of:
- Intensity of pain over the last few days (VAS)
- Affective pain (SES)
- Total score (OQ45.2)

Assessment 1: Reliable change (Jacobson et al. 1991)
Assessment 2: Clinical significant change (Kordy & Hannöver 2000)

Successful
+3 +2 +1

Unsuccessful
0 -1 -2 -3

Improvement in three categories
No change or mixed change
Deterioration in three categories
Total group: Sample description

- Age: 52 ± 11
- f : m = 68 : 32 %
- 43 % not executive staff
- 77 % with partners
- F45.4 „somatoform pain disorder“ in 93 % of cases

- no significant changes between the examination groups

Diagnoses

- 1.6 diagnoses per patient
Total group (n = 31)

Outcome variables

- affective pain
- sensoric pain
- pain intensity today
- pain last 4 days
- OQ45.2 total score
- OQ45.2 symptom distress
- OQ45.2 interpersonal relations
- OQ45.2 social role
Experimental group vs. Waiting group

Post-group-comparisons within the outcome dimension of covariance analysis
(Initial value = Covariance; F value = Group influence)

**Significant, tendential results**

- Current pain (VAS): \( F = 2.98; p = 0.092 \)
- Pain within last couple of days (VAS): \( F = 6.62; p = 0.014 \)
- Sum total psychotherapeutic outcome (OQ45.2): \( F = 4.46; p = 0.042 \)
- Symptom Distress (OQ45.2): \( F = 3.67; p = 0.063 \)
- Social Role (OQ45.2): \( F = 5.34; p = 0.027 \)

**Insignificant, not tendential results**

- Affective pain (SES): \( F = 0.88; p = 0.355 \)
- Sensoric pain (SES): \( F = 0.05; p = 0.832 \)
- Interpersonal Relations (OQ45.2): \( F = 0.36; p = 0.552 \)
Baseline vs. therapy

Results found comparing measurements 1 and 2, as well as 2 and 3 (t-Test)

Baseline: measurement 1 vs. measurement 2

- Social Role (OQ45.2): Deterioration $t = -3.12; p = .012$

Therapy: measurement 2 vs. measurement 3

- Current pain (VAS): Improvement $t = 3.77; p = .004$
- Pain within last couple of days (VAS): Improvement $t = 6.03; p = .000$
- Sum total (OQ45.2): Improvement $t = 2.29; p = .048$
- Social Role (OQ45.2): Improvement $t = 2.47; p = .035$
Total group (Jacobson Plot)

Pain within last couple of days (VAS)  Affective pain (SES)  Psychotherap. outcome (OQ 45.2)

Pre results  Post results
Experimental vs. Waiting group
(Jacobson Plots)

- Pain within last couple of days (VAS)
- Affective Pain (SES)
- Psychotherap. outcome (OQ 45.2)
Waiting group – Baseline vs. Therapy (Jacobson Plot)

Pain within last couple of days (VAS)

Affective pain (SES)

Psychotherap. outcome (OQ 45.2)
Reliable relative changes

Percentage of clients profiting

**MT-conditions**
- Reliable improvement
- No reliable change
- Reliable deterioration

**Controls**

- **p = .002**
- **p = .046**
- **p = .072**

**Sum total:** n = 31
- EX: n = 21
- Ther Cond.: n = 10
- WL: n = 19

**EX:**
- medkorr n = 12
- Waiting Cond.: n = 10
- WL: medkorr n = 11

**Controls**
- MT-conditions
- Controls

**W L: medkorr n = 11**
Clinically significant changes

MT-Conditions  Controls

Percentage of clients profiting

- Clin. sig. improvement
- No clin. sig. change
- Clin. sig. deterioration


p = .104

p = .210

p = .075
Reliable changes within the course of therapy (n = 31)
Clinically significant changes during therapy (n = 31)
Summary

Better therapeutic results:

- Using a combination of medical pain treatment and music therapy
- Even with treatment limited to just 20 units of therapy
- Reduced symptoms for up to 70% of the patient group (especially reduced pain)

- No significant results for patients with headache in a group setting (Risch 2001)
THE END

Thank you for your time and attention!