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Substance Transformation Process

Taking hold of the body – Meeting the cosmic word

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# EURYTHMY THERAPY IN CHRONIC DISEASE: A FOUR-YEAR PROSPECTIVE COHORT STUDY

Revised manuscript of a lecture by Dr. med. Harald J. Hamre given on May 5, 2008

#### The Anthroposophic Medicine Outcomes Study (AMOS)

In order to find worldwide recognition in the 21<sup>st</sup> century, eurythmy therapy needs scientific studies showing its effectiveness. An occasion to perform such a study arose in 1997, when a German Statutory Health Insurance company launched a model project, wherein the costs of an-throposophic therapies were reimbursed. The project also included a research study of eurythmy therapy and other anthroposophic therapies, the Anthroposophic Medicine Outcomes Study (AMOS) [1;2].

The AMOS study was conducted in Germany by our own group at the Institute for Applied Epistemology and Medical Methodology in Freiburg, in collaboration with another research team at the Institute of Social Medicine, Epidemiology, and Health Economics, Charité University Medical Center in Berlin.

AMOS included outpatients aged 1-75 years, starting new anthroposophic treatment for various chronic disorders. The treatments evaluated were anthroposophic art therapy, rhythmical massage therapy, anthroposophic medical therapy (counselling and medication provided by anthroposophic physicians), and eurythmy therapy. The patients were enrolled in the period 1998-2005 and followed up for four years, so the last patients are presently still being followed up. Altogether 1,642 patients were enrolled into the AMOS study. 841 of these patients had eurythmy therapy as main treatment. This presentation will focus on the first 419 eurythmy patients, which were enrolled up until March 2001 [3;4].

# Socio-demographic characteristics of eurythmy patients in the AMOS study

The 419 eurythmy patients came from 13 of 16 German Federal states. The patients were enrolled by 94 anthroposophic physicians and treated by 118 eurythmy therapists. Three-fourth of patients was enrolled by general practitioners, while the remaining patients were enrolled by paediatricians (10% of patients), internists (5%) or by physicians with other specialist qualifications (10%). The majority of patients were children or middle-aged.

Among adults, the proportion of women (71% of patients) was somewhat higher than in German primary care (53%) [3]. Compared to the German population, adult eurythmy patients had higher educational and occupational levels. The eurythmy patients had fewer regular smokers than the population. Very few eurythmy patients consumed alcohol daily. And the patients were also less frequently overweight than the German population, while the proportion engaging in sports activities was similar to the population. Similar was also the proportion of patients living alone, with low income, or unemployed. Similar to the population, permanent disability pension and severe disability status were infrequent. So altogether, the socio-demographics of the eurythmy patients differed from the population in some respects and were similar in other respects.

### Disease status of the eurythmy patients at study enrolment

The main diagnosis, that is the main indication for eurythmy therapy, was classified by the International Classification of Diseases, 10th edition (ICD-10). The most frequent indications for eurythmy therapy were mental, musculoskeletal and respiratory diseases. In this respect some large differences from the disease spectrum seen in German primary care were found. In German primary care [4], the registered contact reason was a mental disorder in only 5% of consultations, while 32% of the eurythmy patients were treated for a mental disorder. Conversely, cardiovascular disorders are frequent in German primary care (18%) but were infrequent among eurythmy patients (4%). The frequency of musculoskeletal disorders was similar in German primary care (20%) and among eurythmy patients (23%).

Most frequent single diagnoses among the eurythmy patients were back pain or sciatica (8% of eurythmy patients), neck-shoulder-arm pain (8%), depression (6%), fatigue (6%), childhood emotional disorder (4%), headache/migraine (3%) and asthma (3%). At study enrolment, 80% of the eurythmy patients had long-standing disease of more than one year's duration.

#### Implementation of eurythmy therapy

Between 94% and 97% of the patients referred to eurythmy therapy at study enrolment actually received this therapy. One-third of patients had their first therapy session within a week after enrolment, one-third waited between a week and a month, and one-third waited for more than one month before starting eurythmy therapy. Half of the patients had between 12 and 23 eurythmy therapy sessions, about one-third of patients had between six and eleven sessions, and some patients had more than 23 therapy sessions (14% of patients) or less than six sessions (5%).

Eurythmy therapy is often used together with other treatments. In the first six study months more than two-thirds of the eurythmy patients also used anthroposophic medications, while only 1% of patients had anthroposophic art therapy. For patients with mental, respiratory or musculoskeletal diseases or headache disorders we analysed the use of conventional therapies such as psychotropic drugs, analgesics, psychotherapy and physiotherapy. In the first six study months, one-third of these patients used at least one diagnosis-relevant conventional therapy, while two-thirds did not.



Figure 1 Disease and Symptom Scores, Range from 0 (not present) to 10 (worst possible). SD: Standard Deviation.

# Outcome of disease symptoms following eurythmy

At study enrolment, the physicians documented the *Disease Score*, which is the overall severity of the main disorder, on a scale from 0 points (not present) to 10 points (worst possible). Most patients had a baseline Disease Score between 5 and 8 points; the average score value was 6.5 points at enrolment and improved to 3.6 points after six months and 3.2 points after 12 months (Figure 1).

Corresponding to this assessment by the physicians, the patients rated the *Symptom Score*, which is the severity of their most relevant symptoms. At study enrolment most patients had a Symptom Score between 5 and 8 points. During the first six study months the average Symptom Score improved from 6.0 points to 3.4 points; this improvement was sustained over the four-year follow-up period (Figure 1).

Some of the improvement might of course have other causes than eurythmy therapy, such as other treatments. However, we analysed Disease and Symptom Scores in patients not using conventional therapies for their main disorder, and these patients had a similar improvement.

A more detailed analysis of other possible causes of the improvement was performed on AMOS patients with eurythmy and other anthroposophic therapies. The analysis shows that adjunctive therapies together with patient dropout, natural recovery and regression to the mean could together explain a maximum of 37% of the improvement of Disease Score [5].

We now return to the analysis of eurythmy patients only. A subgroup treated for *depression* showed marked and sustained improvement of their depressive symptoms [6]. Another subgroup treated for *low back pain* had improvements of back function and back pain.

### Health-related quality of life

In adults health-related quality of life was documented by the *SF-36 Health Survey*, a self-rating questionnaire with 36 items [7]. SF means "Short Form"; the original questionnaire had more items. The SF-36 Health Survey has is analysed in eight scales. In adult eurythmy patients all the SF-36 scales showed significant improvements, which were sustained during the four-year follow-up period (Figure 2).





The *SF-36 scale Physical Function* measures limitations in activities such as climbing stairs, walking, bending or dressing oneself. This and most other SF-36 scales refer to the health status during the past four weeks. All scales range from 0 (maximum limitation) to 100 (no limitation). At study enrolment the patients had worse physical function than a comparison group from the German population with similar age and gender distribution [8]. During follow-up, the physical function improved by around 8 points and became similar to average levels in the German population.

The *SF-36 scale Role Physical* measures limitations in work or other regular daily activities because of physical health problems. This scale improved markedly but did not quite reach the level in the general



Figure 2 SF-36 scales. Higher scores indicate better health. Adult eurythmy patients and German population (standardised for age and gender). SD: Standard Deviation.

population. So although eurythmy had favourable results, not everything was normalised in all patients.

The *SF-36 scale Role Emotional* measures limitations in work or other regular daily activities because of emotional problems such as feeling depressed or anxious. This scale improved by more than 30 points.

The *SF-36 scale Social Function* measures interference with normal social activities with family, friends, neighbours or groups because of physical or emotional problems. This scale improved by almost 20 points.

The SF-36 scale Mental Health measures negative states such as nervousness and depression and positive states, such as happiness and calm. This scale improved by about 15 points and became similar to the level in the population.

The *SF-36 scale Bodily Pain* measures intensity of pain and interference with normal work from pain. This scale also improved by about 15 points.

The *SF-36 scale Vitality* measures positive states of feeling full of life or having a lot of energy, as well as negative states of feeling worn out and tired. This scale improved by more than 15 points.

The SF-36 scale General Health, improved by about 10 points.

The information in these eight scales of the SF-36 Health Survey is often aggregated into two summary measures (Figure 3). These measures are standardised so that the average score in the American population is 50 points with a standard deviation of 10; the values in the German population are similar. The *SF-36 Physical Component Summary measure* improved by about 5 points. The *SF-36 Mental Component Summary measure mary measure* improved progressively until the last follow-up after four years, with altogether a large improvement of almost 10 points.

In older children and adolescents, quality of life was measured by the *KINDL Questionnaire* [9]. During the first six months, the KINDL Sum-





mary Score showed a small but significant improvement. This improvement was maintained until the last follow-up which was after two years for this instrument. In small children quality of life was measured by the *KITA Questionnaire* [10], comprising two scores, both of which improved significantly: the Psychosoma Score and the Daily Life Score.

To sum up: Health-related quality of life was measured in different age groups, whereby all outcomes improved during follow-up.

## Magnitude of improvement following eurythmy and other anthroposophic treatments, compared to improvements following other treatments

Another research question is: How large is this improvement compared to improvements following other treatments? This issue was investigated in a systematic comparative review [11]. We analysed adult AMOS patients receiving eurythmy or other anthroposophic therapies. These patients were compared to patients from other studies with the same diagnoses: asthma, depression, back pain, neck pain or migraine. For the comparison groups SF-36 scales or summary measures were available after 3, 6 or 12 months, as in AMOS.

A total of 84 comparison groups with 16,167 patients were evaluable. For each group several SF-36 scores were available, so a total of 517 comparisons were possible. The comparison patients were treated with drugs, surgery, physiotherapy, other physical therapy, educational intervention or other therapies.

Figure 4 displays the results for all diagnoses analysed together and for individual diagnoses. The diagnosis *neck pain* had the smallest number of comparisons (Figure 4, left middle). Two comparison groups yielded altogether ten comparisons of different SF-36 scales. Eight of these comparisons had better results for AMOS. In other words: In eight comparisons AMOS patients with neck pain had larger improvements of SF-36 scores, compared to patients with neck pain receiving other treatments. In Figure 4 these comparisons are displayed with bars moving to the right. One comparison showed virtually no difference, and one comparison had better results for the comparison group, which is displayed in Figure 4 with a bar moving to the left.

For the diagnosis *asthma* a total of 77 comparisons were possible (Figure 4, right lower). Most comparisons had effect sizes below 0.5 standard deviations, which is reckoned to be a small effect size [12;13]. So



#### Figure 4

Differences between improvements of AMOS diagnosis groups (receiving eurythmy therapy and other anthroposophic therapies) and improvements of corresponding cohorts for all SF-36 scales and summary measures, expressed in effect sizes and ordered in increasing magnitude: for all diagnoses and for Individual diagnoses (altogether n = 517 comparisons). Positive effect sizes indicate larger improvement in AMOS cohort than in corresponding cohort most differences between AMOS and comparison groups were small. On the other hand, in the majority of comparisons, AMOS patients had better results than the comparison groups. This pattern favouring AMOS was a little more outspoken in the diagnoses *depression* (Figure 4, left lower) and *migraine* (Figure 4, right middle). The diagnosis *low back pain* had the largest number of comparisons, altogether 202 (Figure 4, right upper). In Figure 4, left upper part, *all five diagnoses* analysed together with a total of 517 comparisons are displayed. Most comparisons showed small differences.

Another way of looking at effect sizes is to calculate how often there is a difference of at least 0.2 standard deviations [12;13]. In 41% of all comparisons there was such a difference favouring AMOS. In 41% there were only minimal differences below 0.2 standard deviations. And in 18% of the comparisons there was a difference of at least 0.2 standard deviations favouring the comparison groups. Altogether, in this systematic comparative review anthroposophic therapies had favourable results [11].

#### Ratings of therapy effectiveness and satisfaction with therapy

At the six-month follow-up of the AMOS study, the eurythmy patients rated the *outcome of all therapies provided by the anthroposophic physician* on a scale from 0 (no help at all) to 10 (helped very well). Most ratings were 8 points (30% of patients), 9 points (14%) or 10 points (19%). The patients also rated their *overall therapy satisfaction* from 0 (very dissatisfied) to 10 (very satisfied). Again, most ratings were 8 points (23% of patients), 9 points (15%) or 10 points (36%). The *effectiveness of eurythmy therapy* was rated independently by patients and physicians, whereby 86% of patient ratings and 80% of physician ratings were "very effective" or "effective".

#### Health costs in the AMOS study

*Health costs* in the AMOS study were also assessed [14]. We analysed costs of anthroposophic and conventional therapies, inpatient hospital and rehabilitation treatment and sick-leave. Compared to the pre-study year, the average costs in eurythmy patients were increased by 11% in the first study year, while costs in the second year were reduced by 12%.

#### Adverse reactions from eurythmy therapy

Adverse reactions from eurythmy therapy were reported in 13 out of 419 patients (3%), in three patients the reported reactions were of

severe intensity. No reactions were serious and no patient stopped eurythmy therapy because of adverse reactions.

## Conclusion

In the AMOS study eurythmy therapy was associated with sustained improvement of disease symptoms and of quality of life, patient satisfaction was high, health costs were not substantially increased, and eurythmy therapy was well tolerated.

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