STRUCTURED SHORT-TERM GROUP ART THERAPY IN PATIENTS WITH FIBROMYALGIA. A PILOT STUDY

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ABSTRACT

Research background. The causes of fibromyalgia (FM) are unclear and diagnosing FM is complicated, which limits treatment options, and no treatment to date has proven fully effective in alleviating its symptoms. In current studies, where art therapy has been applied in the case of FM, art therapy has been part of a multidisciplinary intervention. The authors were unable to find any published data on the effects of art therapy on FM.

The aim of the research was to determine the effect of group art therapy on pain, emotional state, and feeling of health and comfort of FM patients.

Research methods. Intervention included ten structured art therapy sessions. The participants were 20 women between the ages of 39–64 years. In order to assess the results of therapy, a self-rate questionnaire was used. Therapy session changes were registered using pain and fatigue NRS and semantic differential scales of feeling of health and comfort. The outcome of group art therapy was assessed with a pain and fatigue NRS, and an Emotional State Questionnaire (EST-Q2). An open question was used to study the expectations of participants at the beginning of therapy and the main result of the therapy upon its conclusion.

Research results. During the group art therapy session, pain and fatigue decreased and the feeling of health and comfort improved. This was confirmed by the content analysis of open questions. Following therapy, a significant decrease had taken place in the subscales of the Emotional State Questionnaire in depression, anxiety, and agoraphobia-panic; a substantial decrease in pain and fatigue took place in patients with heightened baseline measures.

Conclusion. The changes following the therapy session confirm the results of earlier studies on the positive effects of psychotherapy and art therapy sessions on pain. The pilot study provided promising results for the application of structured short-term group art therapy with FM patients.

Keywords: group art therapy, fibromyalgia, pain, fatigue, emotional state.

INTRODUCTION

The prevalence of Fibromyalgia (FM) in the general population of various countries has been estimated at between 0.5 and 5%, and it is more common among women (White, Harth, 2001). A recent study (Heidari et al., 2017) showed that the prevalence of FM among the general population is considerably lower than that of populations with specific disorders, e.g. in patients referred to rheumatology clinics and among patients with irritable bowel syndrome, haemodialysis and type 2 diabetes mellitus.

FM is characterized by chronic and widespread pain. The current principles in the diagnostic criteria of fibromyalgia have moved from a pain-focused to a
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Symptom-focused condition, and the proposed diagnostic criteria also require the presence of additional symptoms associated with FM: fatigue, sleep disturbances, somatic and cognitive symptoms, anxiety and depressive episodes. A recent large-scale study (Dean et al., 2017) investigated whether associations between pain and the additional symptoms associated with FM are different in persons with chronic widespread pain compared to multi-site pain, including or excluding joint areas. The study demonstrated that regardless of the definition of pain used, the magnitude of association between pain and other associated symptoms of FM is similar. Thus, the finding supports considering both widespread and multi-site pain when classifying FM. FM can be viewed as a failed attempt of our main complex adaptive system to adapt to a hostile environment (Martinez-Lavin, 2012).

Several pharmacological and non-pharmacological treatments have shown benefit in alleviating the symptoms of FM. Multidisciplinary intervention programmes typically include educational, cognitive and behavioural strategies, physical training, and medication (Burckhardt, 2006). However, M. A. Jensen and D. C. Turk (2014) point out that, to date, there have been few studies designed to break down comprehensive treatments and determine the necessary and sufficient treatment components, and stress that it is important to consider that the response to treatment is individual, and no one approach is likely to benefit all patients. Furthermore, it has been found that marital status, the presence of other physical illnesses, number of years since the onset of pain, and symptoms of anxiety can serve as predictors of the long-term impact of FM on health-related quality of life (Martin et al., 2017). In the longitudinal analysis (ibid.), patients with symptoms of anxiety had lower rates of improvement than those without symptoms of anxiety.

This study focuses on art therapy. Art therapy is a psychotherapeutic treatment in which the therapist helps the client express their experiences through art and the creative process, and which has a clear objective based on the patient’s state of health. In Estonia, art therapy is still a relatively young field of application and art therapy has not yet been applied in health care institutions specifically for reducing chronic pain and FM; even so, within the framework of practice for art therapy master’s students, patients with various types of health problems in their feedback of the therapy have also noted a reduction in pain.

Studies reveal that art therapy for the treatment of FM is applied within treatment programmes, for example, the RCT by Y. van Eijk-Hustings et al. (2013), where multidisciplinary intervention included sociotherapy, physiotherapy, psychotherapy and creative arts therapy. Creative arts therapy took place once a week over a period of 12 weeks, with the focus being on the opportunity to express feelings through visual arts instead of verbal expressions. Even though the study showed the benefits of multidisciplinary intervention, conclusions regarding the effect of
art therapy cannot be made. In the 2013 study by A. A. Babtista et al., the effect of creative arts therapy (integrated dance and art) was compared with the effect of movement (walking) based intervention on FM patients (N = 80). In the case of the creative arts therapy group, the studies revealed a statistically significant improvement on the pain and sleep visual-analogue scales, the Beck depression scale, and the physical functioning, physical limitations, body pain, vitality, emotional limitations and mental health subscales of the quality of life survey (Medical Outcome Survey Short Form 36).

The authors were unable to find any studies on the application of art therapy as an independent form of intervention for FM. There is, however, data on the positive effects of art therapy on chronic pain, for example, M. Angheluta and B. K. Lee (2011) performed a literature review of publications that emerged until 2009, which showed that the results thus far of the application of art therapy on chronic pain were promising for physical symptoms, psychological well-being as well as social change. At the same time, the authors directed attention to the fact that a large portion of the studies were qualitative or single incident studies. In a study of quasi-experimental design (N = 50), N. Nainis et al. (2006) cited the effects of a one hour art therapy session on pain and other cancer-related symptoms; before and after measurements showed a statistically significant reduction in the ESAS (Edmonton Symptom Assessment System) subscales for pain, fatigue, depression, irritability, drowsiness, mood and shortness of breath. Out of the 50 participants in the cited study, 45 claimed that art therapy directed their thoughts away from their illness and drew their attention to something positive, while 18 considered art therapy to be calming and relaxing, six felt they were more productive and valuable, and 12 found it to be a fun activity, while three participants noticed no effect. A. T. Shella (2018) also studied changes in mood during art therapy sessions. Patients with different diagnoses (N = 195) were included in the study. Analysis of pre- and post-study results demonstrated significant improvements in pain, mood and anxiety levels from art therapy sessions for all patients, regardless of gender, age, or diagnosis (all p < 0.001).

Qualitative research by J. Czamanski-Cohen et al. (2014) showed that the combination of cognitive behavioural and art therapy helped 13 women to cope with pain, anxiety and depressive symptoms, and was equally efficacious in individual and group modalities. Creating art provided an opportunity to externalise distressing experiences. The concrete nature of the art product provided a platform for examining mental imagery, practising coping skills, examining and changing maladaptive cognitions and behaviours.

This study is a pilot study, in which a structured approach to group art therapy, orientated towards the strengths and resources of the patients is being tested. The
aim of the research was to examine the effectiveness of group art therapy on pain, fatigue, the emotional state, and the state of the health and comfort of patients with FM.

Hypotheses:
1. The average assessment of pain on the numeric scale prior to therapy is higher than after therapy.
2. The average assessment of fatigue on the numeric scale prior to therapy is higher than after therapy.
3. The average assessment of emotional state measured using EST-Q2 shows a reduction in symptoms following therapy in comparison with the measurement prior to therapy.
4. The average assessment for pain is lower at the end of the therapy session than at the beginning of the session.
5. The average assessment for fatigue is lower at the end of the therapy session than at the beginning of the session.
6. The mean of the ratings of the indicators of health and comfort at the end of the therapy session show positive changes in the feeling of health and comfort during the therapy session.

A supplementary research task was to describe the subjective expectations of patients regarding therapy and the results of therapy.

RESEARCH METHODS

The current research is part of the outcomes research on group art therapy, which was carried out in cooperation with Tallinn University and East-Tallinn Central Hospital. The Hospital was responsible for the selection and recruitment of patients diagnosed with FM. Patients who agreed to participate in the art therapy study were referred to the art therapy groups meeting in the Creative Arts Therapy unit at Tallinn University.

Participants. All participants had been diagnosed with FM by a rheumatologist (M79.7, ICD-10). The inclusion criteria for patients were as follows: the patients had no major concomitant diseases causing the pain syndrome; no notable changes took place in the patient’s pain treatment within the two-week period prior to entry into the study and no changes were planned to take place during the study period.

Participation in therapy and the study were voluntary on the part of the patient. A total of 58 people registered for the preliminary meeting, with 34 attending the preliminary meeting. Of those, 26 agreed to participate in the study, 21 completed the therapy, and 20 came for a follow-up interview. Reasons for refusal to participate in the study were connected with difficulty in finding the time, unsuitable
location, and a lack of interest in art therapy. Drop-outs were a result of illness, family and work obligations, and a temporary change in place of residence.

All of the participants were women between the ages of 39–64, with the average age being 52.1. For participants, this study was their first encounter with art therapy.

**Questionnaires and Data Collection.** This article reflects data collected through self-rate questionnaires: The Estonian Screening Scale for Depression and Anxiety and the *Emotional State Questionnaire (EST-Q2)*, which performs well on psychiatric patients and the general population (Ööpik et al., 2006). The participants were asked to report how much various problems had troubled them during the past four weeks, using the scale (0 = not at all; 1 = seldom; 2 = sometimes; 3 = often; 4 = all the time). The EST-Q2 version consisted of 28 items and contained subscales of Depression, Anxiety, Agoraphobia-Panic, Fatigue, and Insomnia; reflecting symptoms of depressive and anxiety disorders according to ICD-10 and DSM-IV. The questionnaire was completed at a pre- and post-therapy meeting.

*Pain and Fatigue Numerical Rating Scales (NRS)* with 11 divisions (0–10) were completed at a preliminary meeting and follow-up meeting, and at the beginning and end of each session. Numerical assessment scales are used extensively for measuring pain (McCaffery, Beebe, 1993; Farrar et al., 2001) and their use in clinical studies is recommended (Committee for Medicinal Products for Human Use (CHMP), 2007). Simple numerical rating scales are applied to subjectively assess health indicators, including pain and fatigue, irrespective of the state of health, age, or gender (Magasi et al., 2012).

*Health and Comfort Semantic Differentials* include six bipolar scales with seven divisions, which are used to describe changes taking place during the therapy session (Rüütel, 2002). Scales were completed at a preliminary meeting and follow-up meeting, and at the beginning and end of each session.

Two open-ended questions were also incorporated into data analysis. At the end of the first group therapy session the participants provided a short answer to the following written question: ‘What are your expectations for art therapy (based on pain, pain experience, coping with pain)?’ and at the end of the last session they answered the question: ‘Can you please describe your experience with and the result of group art therapy (based on pain, pain experience, and coping with pain)?’

**Procedure.** The intervention was carried out from February to June 2017. Group size was 3–6 participants. Participants were divided into groups based on their language needs (three groups were Estonian and three were Russian) and the time at which they were held (participants were able to select a group time of morning or afternoon). It was a closed group, with new participants not being accepted
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Sessions took place once a week for a period of 90 minutes. The therapy process was comprised of ten structured sessions, with the topics and art therapy intervention methods used being the same in all groups. At each therapy session, one or several topical works of art were created, with the therapeutic work taking place through the art work. The first session included an introduction to art therapy, a personal introduction, and the expectations for art therapy and the functioning of the group. The two following sessions focused on personal strengths and identifying resources, and coping with the emotional backdrop of everyday life and stressors. During the fourth, fifth and sixth sessions, experience with pain was studied and coping was enacted. The seventh session focused on the topic of the support network and opportunities for receiving help. The eighth session was directed towards cooperation and the application of the group’s resources towards finding solutions to personal situations. The art exercises performed at the second and third sessions were repeated at the ninth session, to explore the changes in the art works and in coping with the everyday emotional backdrop and stressors. During the tenth session, joint work depicting the group work process was performed, and a summary of the therapy was prepared. Patients continued with their standard treatment while participating in art therapy.

Group art therapy was carried out by the first three authors of this article. Pre-and post-therapy meetings took place on an individual basis. The preliminary meeting took place one to two weeks prior to the start of therapy. The preliminary meeting consisted of an introduction to the study and group art therapy, the informed consent of the participant was taken, and the participant completed questionnaires. The post-therapy meeting took place one to two weeks after the end of intervention, during the course of which follow-up measurements and an interview were conducted (interview data is not reflected in this article).

Data Analysis. The data were analysed using t-tests for dependent variables. Semantic differential scales were entered as 7 point numerical scales, with the higher number indicating a better state of health and comfort, e.g. 1 = uncomfortable ... 7 = comfortable. Answers to open questions were analysed using a summative content analysis.

Ethical Considerations. Permission for conducting the study was given by the Tallinn Medical Research Ethics Committee and the Estonian Data Protection Inspectorate. Participation in the survey was voluntary, and participants were free to terminate their participation. Prior to the start of group art therapy, the participants received an introduction to the work methods and tools used in art therapy, as well as the circumstances associated with participating in the study. Art skills were not important for participating in the therapy group. All participants gave their informed consent to participate in the study, in which they gave permission for
their personal data (gender, age, and education), and data and materials gathered over the course of the study to be used in study related objectives. Participants in the survey were guaranteed anonymity. Group therapy was carried out by a professional art therapist and two art therapy master’s students with practical clinical experience. The therapy was carried out in adherence to the professional standard and ethical codex for creative arts therapists. Regular co-vision of the work group took place in parallel with group art therapy.

RESEARCH RESULTS

For different reasons, there were absences from group therapy sessions. Four patients participated in all ten group art therapy sessions, seven in nine sessions, five in eight sessions, two in seven sessions and two in five sessions.

Patients’ expectations and perceived outcome of the art therapy. The results of the content analysis of two open questions are presented in Table 1.

Table 1. Patients’ expectations and perceived outcome of group art therapy

<table>
<thead>
<tr>
<th>Expectations at the end of the 1st session (number of answers)</th>
<th>Outcome at the end of the 10th session (number of answers)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• To divert thoughts/attention away from pain – 6</td>
<td>• Pain condition</td>
</tr>
<tr>
<td>• To cope with pain/troubles – 4</td>
<td>o Less pain during art work – 12</td>
</tr>
<tr>
<td>• Curiosity/ how does it work – 3</td>
<td>o Pain came back after the session – 3</td>
</tr>
<tr>
<td>• Positive emotions – 2</td>
<td>o More pain at the end of the session – 1</td>
</tr>
<tr>
<td>• Possibility to draw – 2</td>
<td>o No changes in pain – 1</td>
</tr>
<tr>
<td>• To learn about yourself – 1</td>
<td>• Experience</td>
</tr>
<tr>
<td>• No specific expectations – 4</td>
<td>o Positive group experience/relations – 7</td>
</tr>
<tr>
<td></td>
<td>o Pleasant experience/activities – 6</td>
</tr>
<tr>
<td></td>
<td>o Learning experience/knowledge – 3</td>
</tr>
<tr>
<td></td>
<td>• Benefit:</td>
</tr>
<tr>
<td></td>
<td>o Support – 3</td>
</tr>
<tr>
<td></td>
<td>o New viewpoint – 3</td>
</tr>
<tr>
<td></td>
<td>o Self-awareness – 3</td>
</tr>
<tr>
<td></td>
<td>• Started to perform art activities at home – 4</td>
</tr>
</tbody>
</table>

Changes in perceived pain and fatigue. Measurements following therapy showed a reduction in the average indicator for pain and fatigue on the numerical scales in comparison with the indicators prior to therapy (pain before 4.9, standard deviation (SD) = 2.0, after 3.8, SD = 2.3; fatigue prior 4.4, SD = 2.2, after 3.7, SD = 2.0), although the differences were not statistically significant. By including
only the cases with the preliminary measures ≥ 5 (in the case of pain N = 11; in the case of fatigue N = 11), a significant decrease appeared in pain (before 6.5, SD = 1.3; after 3.9, SD = 2.1; t = −3.8; p < .01) and in fatigue (before 5.9, SD = 1.0; after 4.5, SD = 2.1; t = −2.3; p < .05). In the heightened pain group the average fatigue indicator was not elevated and the reduction in fatigue was not statistically significant in this group (before 4.5, SD = 2.6; after 4.2, SD = 2.2).

The average changes in the pain and fatigue scales which occurred during a therapy session were statistically significant, indicators are presented in Figure 1. T-value for pain was 4.55 and for fatigue – 4.84; p < .001; the number of measurements was 167.

Figure 1. Mean changes in the indicators of pain and fatigue during a therapy session

**Changes in the state of health and comfort.** Significant changes took place during a therapy session in the state of health and comfort measured by the semantic differential scales (Table 2).

<table>
<thead>
<tr>
<th>min = 1</th>
<th>Before M/SD</th>
<th>After M/SD/t</th>
<th>max = 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncomfortable</td>
<td>5.2/1.3</td>
<td>5.9/1.2/6.7</td>
<td>Comfortable</td>
</tr>
<tr>
<td>Restless</td>
<td>5.0/1.5</td>
<td>5.9/1.2/6.7</td>
<td>Calm</td>
</tr>
<tr>
<td>Tense</td>
<td>4.6/1.3</td>
<td>5.6/1.2/9.2</td>
<td>Loose</td>
</tr>
<tr>
<td>Sad</td>
<td>5.3/1.2</td>
<td>5.8/1.0/6.2</td>
<td>Joyous</td>
</tr>
<tr>
<td>Fearful</td>
<td>5.7/1.1</td>
<td>6.2/1.0/4.9</td>
<td>Courageous</td>
</tr>
<tr>
<td>Sluggish</td>
<td>4.8/1.4</td>
<td>5.7/1.0/8.5</td>
<td>Alert</td>
</tr>
</tbody>
</table>

**Notes.** * Scales of semantic differentials with 7 divisions. The polarities corresponding to the minimum and maximum of the scale are indicated in the table. Symbols used in the table: M – mean, SD – standard deviation, t – t-value.

The direction of change was towards comfortable, calm, loose, joyous, courageous, and alert (p < .001, numbers of measurements 163–166).

**Changes in emotional state.** A statistically significant decrease took place during the art therapy process in the emotional state regarding subscales for depression, anxiety and fatigue, and the aggregate indicator (Table 3).
Table 3. Emotional State Questionnaire EST-Q2 (means/standard deviations)

<table>
<thead>
<tr>
<th></th>
<th>Depression</th>
<th>Anxiety</th>
<th>Agoraphobia-Panic</th>
<th>Social anxiety</th>
<th>Fatigue</th>
<th>Insomnia</th>
<th>EST-Q2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cut-off point</td>
<td>≥ 12</td>
<td>≥ 12</td>
<td>≥ 7</td>
<td>≥ 4</td>
<td>≥ 8</td>
<td>≥ 6</td>
<td></td>
</tr>
<tr>
<td>Before therapy</td>
<td>10.7/5.3</td>
<td>11.5/3.8</td>
<td>2.7/2.8</td>
<td>1.9/1.6</td>
<td>9.2/3.5</td>
<td>7.0/2.8</td>
<td>42.9/12.3</td>
</tr>
<tr>
<td>After therapy</td>
<td>7.3/4.4</td>
<td>8.8/4.0</td>
<td>3.6/2.4</td>
<td>1.3/1.4</td>
<td>7.8/3.0</td>
<td>6.2/3.6</td>
<td>34.9/13.5</td>
</tr>
<tr>
<td>t</td>
<td>2.7*</td>
<td>2.4*</td>
<td>−1.6</td>
<td>1.9</td>
<td>2.2*</td>
<td>1.0</td>
<td>2.4*</td>
</tr>
</tbody>
</table>

**Note.** * – p < .05.

The results of the first measurement were above the cut-point in the insomnia and fatigue subscales, during the second measurement the indicators had decreased; however, the decrease was not statistically significant.

DISCUSSION

The results of this pilot study are promising, indicating the possibility to bring art therapy patients relief through the reduction of several FM symptoms. Both numeric data as well as participant feedback showed that during group art therapy sessions, the well-being of participants improved and they felt less pain. The results refer to the gate control theory of pain (Melzack, Wall, 1965), which integrates peripheral stimuli with cortical variables in the perception of pain, and contemporary neurophysiological models of pain (Jensen, Turk, 2014), which provide a physiological explanation for how psychological treatments might influence the experience of and adjustment to pain. M. P. Jensen and D. C. Turk (2014) assume that virtually all psychological pain interventions could be beneficial at least in part because they alter activity and processes in the prefrontal cortex, which is actively involved in the processing of nociceptive information that might subsequently be interpreted as pain. Following the explanations of Jensen and Turk, if art therapy alters one’s sense of physical comfort and psychological calm (measured by the semantic differential scales in the current research), it could potentially alter brain activity and processing related to pain.

Content analysis of opened questions showed that for some participants, the pain came back after the therapy session. This confirms the claim presented above, referring to the effect of therapeutic factors during the therapy session and the loss/reduction of their effect outside of therapy. The importance of contextual factors...
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in the case of FM patients has also been highlighted by several studies (Martinez-Lavin, 2012; Martin et al., 2017). This directs one to search for those therapeutic art therapy factors, which would help FM patients to retain the change in well-being achieved during their therapy session. Relying on content analysis, it can be mentioned here that four participants out of the 20 were inspired to also engage in making art at home. The form of group therapy also seems suitable, since several participants cited the group and group activities as having a positive effect.

The impact of the process of art therapy as a whole was initially brought to the forefront by indicators of the emotional state – the reduction in the symptoms of depression, anxiety and fatigue. The statistically important decline in the average measure for pain and fatigue appeared in the case of those participants for whom the corresponding indicators had been heightened prior to the start of therapy. This was expected, as larger changes may occur in the case of higher base indicators.

The limit of this pilot study is, without a doubt the small sample size and dropping out of participants, which does not permit specific generalisations to be made regarding group art therapy. It may also be presumed that an effect of some kind may be the result of seasonal changes occurring due to Estonia’s geographic location. The therapy started in February, when the winter is cold in Estonia and the days are short. As the therapy continued the weather became warmer and the days became lighter, which may support the general effectiveness of treatment.

However, in general, it can be concluded that the presented hypotheses received confirmation and the structured, strengths and resources oriented short-term group art therapy may have a positive effect on pain and discomfort caused by FM. There were different pain-related outcomes and benefits of art therapy – from the pleasantly spent time to the essential changes. A larger sample size and control group is needed to assess the effect of the short-term group art therapy programme on pain, and identify who can benefit from it. Follow-up is needed to determine the long-term effect of the intervention.

CONCLUSION

In summary, we can say that patients with FM, who volunteered to participate in the art therapy groups, came there because they were interested in art therapy and they did not expect to receive any particular benefit regarding their pain condition. However, after ten sessions/three months, they realised that in addition to medication, painkillers and physical therapy, there was a way to deal and cope with pain through art.
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SANTRAUKA

Tyrimo pagrindimas. Fibromialgijos (FM) priežastys nėra visiškai aiškios, o diagnozavimas – sudėtingas. Šie veiksniai itin riboja FM gydymo galimybes. Iki šiol nėra įrodyta, kad kuris nors gydymo metodas būtų toks veiksmingas, kad visiškai palengvintų FM simptomus. Šio straipsnio autoriams nepavyko rasti ankščiau publikuotų tyrimų apie dailės terapijos poveikį FM.

Tyrimo tikslas – nustatyti grupinės dailės terapijos poveikį ligonių, sergančių fibromialgija, skausmui, emocinei būsenai bei sveikatos ir komforto jausmui.