

# Therapeutic factors and effects of dance movement therapy in multimodal pain therapy – a patient survey

## Mögliche Wirkfaktoren und Effekte der Tanztherapie in der Multimodalen Schmerztherapie – Eine Patientenbefragung

### Abstract

The present survey explored patient perception of the effects and therapeutic factors of the dance movement therapy (DMT) approach within the framework of multimodal pain therapy (MMPT). The intention was to test hypotheses which were developed on the basis of a literature review and the practice of the author, who was working in a clinic for patients with chronic pain. 41 patients who answered pre and post questionnaires, developed for this survey, were recruited between August 2019 to February 2020 from the weekly DMT groups of the outpatient day clinic for patients with chronic pain in Elisabeth Herzberge Hospital in Berlin. The paired t-test of the pre/post survey shows a significant increase for four items: mood  $p=0.005$ , music  $p=0.000$ , movement  $p=0.008$  and therapist attitude  $p=0.006$ . The analysis of the qualitative survey identifies joy, movement, defocusing from pain, reduction of pain, music and group support as the most frequent factors that motivate participants and affect the therapeutic outcomes. Patients consider DMT effective in the areas of mood, joy, music, group, movement, distraction from pain and the attitude of the therapist.

**Keywords:** dance movement therapy, DMT, multimodal pain therapy, MMPT, therapeutic factors, therapeutic effects

### Zusammenfassung

In der vorliegenden Studie wurde untersucht, wie die Patient:innen die Wirkung und therapeutischen Faktoren des DMT-Ansatzes (Dance Movement Therapy) im Rahmen der multimodalen Schmerztherapie (MMST) wahrnehmen. Ziel war es, Hypothesen zu überprüfen, die auf der Grundlage der Literaturlauswertung und der Praxis der Autorin, die in einer Klinik für Patient:innen mit chronischen Schmerzen arbeitete, entwickelt wurden. In der Zeit von August 2019 bis Februar 2020 konnten aus den wöchentlichen DMT-Gruppen der Tagesklinik für Patient:innen mit chronischen Schmerzen im Elisabeth Herzberge Krankenhaus in Berlin 41 Patient:innen rekrutiert werden, die die für diese Studie entwickelten Prä- und Postfragebögen beantworteten. Der gepaarte t-Test der Prä-/Post-Befragung zeigt einen signifikanten Anstieg für vier Items: Stimmung  $p=0.005$ , Musik  $p=0.000$ , Bewegung  $p=0.008$  und Haltung der Therapeutin  $p=0.006$ . Die Analyse der qualitativen Befragung ermittelt Freude, Bewegung, Ablenkung vom Schmerz, Schmerzlinderung, Musik und Gruppenunterstützung als die häufigsten Faktoren, die die Teilnehmer:innen motivieren und die therapeutischen Ergebnisse beeinflussen. Die Patient:innen halten DMT für wirksam in den Bereichen Stimmung, Freude, Musik, Gruppe, Bewegung, Ablenkung vom Schmerz und der Haltung der Therapeut:in.

**Schlüsselwörter:** Tanztherapie, Dance Movement Therapy, DMT, Multimodale Schmerztherapie, MMST, Wirkung, therapeutische Faktoren

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## Introduction

In Germany, chronic pain can be treated within the framework of multimodal pain therapy (MMPT) if individual treatments (unimodal therapies) have not been successful. In this context, DMT can be part of the therapy program as an adjuvant therapy. The present article describes the concept of MMPT that incorporates DMT, hypothesises as the effects of DMT within the context of MMPT are also introduced as well as the survey methods. Finally, the search results are presented followed by a discussion as to the effects and therapeutic factors of DMT in MMPT.

## Chronic pain and multimodal pain therapy (MMPT)

Chronic pain can become a disease in its own right with far-reaching consequences for the lives of patients, their environment and society.

*ICD-11: MG30.0 Chronic primary pain is chronic pain in one or more anatomical regions that is characterised by significant emotional distress (anxiety, anger/frustration or depressed mood) or functional disability (interference in daily life activities and reduced participation in social roles). Chronic primary pain is multifactorial: biological, psychological and social factors contribute to the pain syndrome. The diagnosis is appropriate independently of identified biological or psychological contributors unless another diagnosis would better account for the presenting symptoms. [1]*

As the ICD-11 definition above illustrates, chronic pain has multifactorial causes and manifestations. Multimodal pain management seeks to address these various factors.

*Multimodal pain therapy describes an integrated multidisciplinary treatment in small groups with a closely coordinated therapeutical approach. Somatic and psychotherapeutic procedures cooperate with physical and psychological training program. [2]*

In Germany, multimodal pain therapy (MMPT) is offered in different settings, on an outpatient, day-care or inpatient basis over correspondingly different periods of time. Within all of these setting is the cooperation of a multidisciplinary team of doctors, psychologists, physiotherapists, occupational therapists and creative therapists such as music, art and dance. Professionals and patients cooperate in order to influence the experience of pain. Even if the pain does not necessarily subside completely, they explore possibilities to deal with and alleviate the discomfort. Patients often have a long history of suffering or have tried various treatment methods before they are referred to MMPT. They withdraw from their social activities and are sometimes unable to work for months [3] or years. The goals of MMPT are the resumption of everyday activities and the ability to work and engage in physical activity along with a reduction in protective behavior [4].

The treatment concept of the MMPT Elisabeth Herzberge Berlin, where the survey took place, includes a weekly therapy plan. Patients are offered interventions from the different professionals in either individual or small group settings. The professionals involved in the treatment concept of the present study were neurologists, psychologists, physiotherapists, occupational therapists, social workers, nurses (specially trained in pain management) and dance movement therapists. Within the framework of the so-called pain conference, all professionals involved meet weekly to exchange information about the concerns of individual patients and to adjust the treatment if necessary. The program is repeated after 5 to 8 weeks, depending on the target group, so that all patients receive the same therapy services.

## Dance movement therapy (DMT) and MMPT

DMT is a body – oriented psychotherapy which uses dance and movement besides verbal expression. Movement analysis concepts are used for diagnostics and design of interventions. Integration of physical, emotional and cognitive experiences of a person for a self-guided way of life is the general aim of DMT [3]. DMT provides physical training through interventions in movement as well as psychotherapeutic provision. This serves to restore or maintain the holistic unity of body, mind and soul [5]. DMT thus uses body perception, providing patients with an opportunity to move, to be moved and to express themselves through their bodies. In this way, personal issues or questions, emotions and/or body perception may be experienced in movement. Reflective discussion serves to verbalize experiences, raise awareness and support the possibility of transfer outside of therapy to everyday life.

Goodill [6] describes the different practical approaches of medical DMT, so for chronic pain, which include working on the acceptance of pain in order to stop fighting against it and to find creative solutions to problems. For this purpose, creative expression, Laban efforts and Kestenberg tension flow are used. The Chace method of group psychotherapy is used with the aim of strengthening well-being of the body, releasing tension, increasing joint mobility and range of movement and increasing slow/flow movement quality. The insights achieved through body expression are transferred into daily life in order to achieve an effective coping with the pain. Overall Goodill states that DMT is a suitable measure for the treatment of pain patients. On the one hand, it combines body movement with music and rhythm. The latter according to Achterberg (1985), has an analgesic effect [6]. On the other, DMT integrates physical, cognitive, social and emotional aspects and thus corresponds to the biopsychosocial model and addresses all levels in the treatment [6]. In her unpublished diploma thesis, Forstner [7] describes pain patients as exemplifying the following movement and effort characteristics: bound, sustained and direct movements. Free, sudden and indirect move-

ments are more commonly associated with an increase in pain and have often disappeared from movement behavior [7]. A DMT session might, for example, focus on trying out contrasting movement qualities. The reflection is used to discuss in which situations and which feeling the various movement qualities are associated. With the trial action in movement (trying out), different types of movement can be (re)included in one's own repertoire and thus expand the scope of action.

The concept of DMT for this survey was developed in the context of concrete practical activity and relates to the specific environment of the patients interviewed. A kind of manual with a fixed program was created. This ensured replicability of the therapy offer. The topics of the program were: Laban efforts (direct/indirect), pressure and balance, closeness and distance, weight and grounding, mirroring and contrasting, leading and following. One focus of the program is on activating the patients and practicing methods which enable them to cope with pain in their everyday lives. In this context, the DMT concept has been developed as a program in which different issues can be tried out playfully in movement. The transfer to everyday life is done in the reflection rounds.

A number of studies demonstrate evidence as the effectiveness of DMT for pain patients: In a meta-analysis on the effectiveness of DMT methods for somatoform disorders with a focus on pain, Schewe and Schwiertz [5] examined five studies. They concluded that DMT had a positive effect on mental and physical health and on pain [5]. Erhardt [8] surveyed a sample of 80 patients receiving MMPT before and after a DMT session using the FAHW-12 questionnaire on general habitual well-being in connection with the pain scale, rating pain intensity, mood, physical, social, and psychological well-being. The results suggest that DMT has a positive effect on the well-being of pain patients. Social, psychological, and physical well-being improved by 8% (social), 13.4% (psychological) and 13.6% (physical) after the DMT session. Pain intensity was reduced by 11.5% and mood improved by 22.1%. Bojner-Horwitz et al. [9] investigated the influence of DMT on fibromyalgia patients. Patients reported less intense pain and improved well-being after treatment, both compared to the start of treatment and compared to the control group. Patients considered dance to have the greatest impact during therapy, followed by music and drawing. Hilf's diploma thesis [10] on the effectiveness of DMT for somatoform disorder shows a reduction in somatoform symptoms, psychological distress and depression in the group of patients who received DMT. Shim et al. 2019 [11] conducted a study with 20 pain patients who completed a ten-week DMT program. The results of the study indicate a reduction in perceived pain, increase in feelings of control over pain and motivation to take care of health and well-being, the increase of acceptance and the integration of pain. Emotional health is consolidated and there is an increase in health promoting activities and characteristics of resilience. The methods of imagination and mirroring were reported by the participants to be very effective, in addition to movement-based

self-narration. The therapist should create a space free of judgment and not force the participants to move but rather focus on participant self-awareness and movement within their own physical possibilities, as well as providing challenges within movement sessions so that the participants can experience progress. Finally, the importance of kinesthetic empathy and acceptance, both by the therapist and the group, is emphasized [11].

These studies demonstrate effects of DMT for patients with chronic pain. The interest of the present paper was to obtain an insight into patient perception of the impact of DMT, particularly in light of the mandatory participation in all program therapy offers, including DMT. Under these conditions, it seemed particularly interesting to ask patients about aspects of the effect and impact of DMT, with the aim of confirming effects already found in the literature and/or gaining new insights. Observing patients and their statements about DMT during working in the clinic and comparing these to findings from literature review gave the impulse to conduct a structured survey on the patients' views of the effectiveness of DMT in this concrete context. Another interest was to clarify whether patients were able to perceive the therapy goals for themselves as addressees of therapy intended to derive benefits, such as altered movement qualities and pain perception.

## Methods

During the research for suitable questionnaires limitations emerged. Questions arising from the concrete work could not be answered by existing questionnaires. Moreover, due to the limitation of the research volume it was not possible to process a battery of questionnaires. For this reason, a questionnaire was developed that refers to the context of the patients interviewed and to the DMT approach. Studies showing the effects of DMT were used to help formulate the survey's hypotheses ([5], [7], [8], [9], [10], [11], [12], [13]). The DMT effect factors compiled by Koch and Eberhard [14] were also considered. The list of hypotheses (Table 1) is derived from the literature review, the goals of the treatment concept and the open questions about the effect of DMT from the patients' perspective in the context of MMPT. The questionnaire (Attachment 1 and Attachment 2) was developed from these hypotheses. After a test with two dance movement therapists and two persons without DMT knowledge, it was adapted and handed out to the patients in its present form.

The survey took place from August 2019 to February 2020 in the day clinic for special pain therapy of the Königin Elisabeth Herzberge Hospital in Berlin Lichtenberg [15], where the author worked. The day clinic offers two different settings. The geriatric pain day clinic is targeted to those less able to cope with strain due to age or health restrictions. Participants come to the clinic three times a week for interventions. There are fixed groups of up to six patients who follow the therapy program together for

Table 1: List of hypotheses

Hypotheses	
1.	DMT trains body awareness
2.	DMT lifts the mood
3.	The group supports participants
4.	DMT helps to recognize/name preferences
5.	During DMT participants perceive less pain
6.	DMT helps to divert attention from pain
7.	Music helps participants to get moving
8.	Participants learn about different qualities of movement in the setting of DMT
9.	In the setting of DMT, participants practice taking their own needs into account.
10.	Within the framework of the DMT, participants exercise influence on the creation of the lessons
11.	DMT stimulates the creativity of the participants.
12.	The therapist's attitude contributes to the motivation to participate.
Open questions:	
13.	What motivates patients to participate in DMT?
14.	What do patients think is the effect of DMT?

eight weeks. The second target group comprises around eight people who complete a weekly five-day eight-hour daily program for five weeks. DMT takes place once a week for one hour. Patients agree to participate in all offers of the therapy program at the beginning of treatment. The study was conducted with the self-developed questionnaire consisting of twelve quantitative and two qualitative questions (Attachment 1 and Attachment 2). For the sample, patients were recruited from the pain day clinic and the geriatric pain day clinic of the Königin Elisabeth Herzberge Hospital in Berlin. The questionnaire was administered to the patients by the nurses or the dance therapist before the start of the treatment (PRE) and at the end of the program (POST-questionnaire) between August 2019 and February 2020. Answering the questionnaire was voluntary and anonymous. The patients were informed about the purpose of the data. This was approved by the hospital's ethics committee. A total of 101 questionnaires were completed: 60 PRE- and 41 POST-questionnaires were returned. The open-ended questions were completed by 72% of participants in the PRE survey and 78% in the POST survey. All patients had a diagnosis related to chronic pain, and thus suffered from various pain disorders, for instance, back pain, headaches, joint pain, whole body pain, facial pain or nerve pain. The average age of the respondents was 60 years with a range of 20–90 years. 40% of the respondents were men, 60% were women. The intervention was carried out according to a DMT manual developed by the author for the target group to ensure comparability and replicability of DMT treatment. A control group was not provided for this study.

The questionnaire consisted of twelve scaled and two open-ended questions. In the POST questionnaire, each question is complemented by a question specifically related to the experience in DMT (POST 2). The aim was to focus on the experiences in DMT and to distinguish them from the experiences in the other therapies of the pro-

gram. For example, question 2: "My mood is good" and "After DMT my mood is good". The quantitative data of the paired 41 PRE and POST questionnaires were analyzed with SPSS 24 [16]. The paired t-test was chosen for the comparison of the PRE- and POST-questionnaire and for the comparison of the POST and POST 2 questionnaire. POST 2 results from the additional questions in the POST-questionnaire that were specifically asked about the DMT intervention. In addition, correlations between different items were calculated on both sides using Spearman's Rho. The effect size of the significant items was calculated with Cohen's d and, as a control, with the correlation coefficient r [17]. The qualitative data of the open-ended questions was analyzed according to the model of Mayring's qualitative content analysis [18]. The inductive category formation was used since most patients answered in keywords. These were sorted alphabetically. The alphabetical order resulted in subgroups of recurring mentions. Keywords matching the content were sorted into groups.

## Results

The results of the evaluation are summarized in Table 2. From left to right, the number of the item of the questionnaire is listed first, followed by the content of the question and the underlying hypothesis. The last column 'Result' shows the significance and correlation to other items. In Table 3 the Results of the effect strength Cohen's d and the correlation coefficient r of significant items are listed.

Table 2: Outcome

No	Content	Hypothesis	Outcome
<b>scaled questions</b>			<b>sample – 41</b>
01	Body awareness	DMT trains body awareness	No significance
02	Mood	DMT lifts the mood	PRE–POST p=0.005   POST–POST 2 p=0.037 Correlations: 2.2 mood – 3.2 group 0.473*** 2.2 mood after DMT – 6.3 pain during DMT 0.428** 2.2 mood after DMT – 6.4 pain after DMT 0.346*
03	Group	Group supports participants	Correlation: 3.2 group – 2.2 mood 0.473** Qualitative survey
04	Behavioral preferences	DMT contributes to being able to recognize/name preferences	POST–POST2 not directly comparable Correlation: 4.1 I know what I like to do and 4.2 I consciously act accordingly. 0.476**
05	Redirecting attention	During DMT, participants perceive pain less	Open questions
06	Movement – pain	DMT helps divert attention from pain	Correlations: 2.2 mood after DMT – 6.3 pain during DMT 0.428** 2.2 mood after DMT – 6.4 pain after DMT 0.346* Open questions: movement
07	Influence music	Music helps to get participants moving	PRE-POST p=0.000 Correlation: 7.2 music- 2.2 mood 0.582** Open questions
08	Movement quality	Participants get to know different movement qualities within the context of DMT	PRE-POST p=0.008 movement quality strong Correlations: 6.1 movement increases pain: 8.1 direct –0,441** 8.3 bound 0.493**
09	Self-control	In the DMT setting, participants practice taking their own needs into account.	No significance Relatively high mean value at 9.4: In DMT I can adapt movements to my physical capabilities at 4; correlates with 10.2 own ideas/wishes 0.653** 11.2 creativity 0.644** 12.2 motivation 0.588** u.a.
10	Self-competence	Within the context of DMT, participants practice influencing what happens. Bringing in ideas	Correlation: 10.2 Post Contribute ideas/wishes with 12.2 motivation/posture 0.437** 9.4 can adapt movements to my possibilities 0.644** 4.1 I know what I like to do 0.334*
11	Creativity	DMT stimulates the creativity of the patients	No significance Correlation: 11.2 creativity – 12.1motivation 0.466*, 11.2 creativity – 9.4 in DMT I can adapt movement to my possibilities 0.644**
12	Motivation/posture therapist	The therapist's posture contributes to the motivation to participate.	PRE-POST p=0.006   POST – POST p=0.001 Correlation: 11.2 creativity 0.466**, 9.4 adapt movements to physical capabilities 0.588**, 10.2 express wishes 0.437**
<b>Open questions</b>			<b>PRE: N-43   POST: N-32</b>
13	Motivation DMT (Expectation)	What motivates participants to take part in DMT?	PRE: movement 44%, pain relief/distraction from pain 33%, joy/fun 21%, music/rhythm 14%, group/community 12%, nothing 7%, experience/try something new 12%, dance 7%. POST: movement 34%, therapy plan (compulsory participation) 25%, joy/fun 19%, pain relief/distraction from pain 19%, group/community/social 16%, experience/try something new 16%, Music 13%
14	Impact DMT (Expectation)	What do patients think the impact of DMT?	PRE: pain relief/distraction pain 30%, movement 26%, joy/fun 19%, relaxation 9%, music 5%, endurance 5%. POST: movement 50%, joy/fun/playful 41%, pain relief/distraction from pain 31%, music/rhythm 22%, group/community/social 16%, variety 6.25%

\* The correlation is significant at the 0.05 level (two-sided)

\*\* The correlation is significant at the 0.01 level (two-sided)

Table 3: Results of the effect strength of significant items

	Mean value	Standard deviation	Standard error of mean	95% confidence interval of the difference	T	df	Sig. (2-sided)	Cohen's d	d>0.3* d>0.5** d>0.8***	Correlation Coefficient r	r>0.1* r>0.3/r>0.2** r>0.5/r>0.3***
PRE-POST mood	0.967	1.732	0.316	0.32 1.613	3.057	29	0.005	0.558	medium	0.494	medium/strong
PRE-POST music supports movement	1.419	1.893	0.34	0.725 2.114	4.174	30	0	0.750	medium	0.606	strong
PRE-POST movement quality strong	0.806	1.579	0.284	0.227 1.386	2.843	30	0.008	0.510	medium	0.461	medium/strong
PRE-POST motivation dmt	1.034	1.861	0.346	0.327 1.742	2.994	28	0.006	0.556	medium	0.492	medium/strong
POST-POST motivation & posture of therapist	-0.462	0.79	0.126	-0.717 -0.206	-3.65	38	0.001	0.585	medium	0.509	strong

\*Light; \*\*Medium; \*\*\*Strong

In the paired t-test of the PRE-POST comparison, four items showed a significant difference. These are highlighted in grey in Table 2. **Mood** (item 2) was significantly increased in the POST survey with a t-value of 3.057 at p=0.005 with a medium to strong effect size (Table 3). As well as in the Post-Post 2 comparison which focuses on DMT: Item 2 “mood” shows a significant variance with a t-value of -2.154 and p=0.037. Item 7 “**Music**” showed a highly significant increased agreement in the POST survey compared to the PRE survey, with t=-4.174 and p=0.000 and a medium to strong effect size. The **move-**

**ment** quality “My movements are strong” of item 8.2 increased significantly in the PRE-POST comparison with t=2.843 and p=0.008, effect size medium/strong. Finally, there was a significance for the increase in **motivation** for DMT (item 12.1) with t=-2.994 and p=0.006, effect size as well medium/strong. This significance was also found in POST-POST 2: clearly highly significant with p=0.001 and a t-value of -3.650. Finally, in POST-POST 2 the item 4 asking for behavioral preferences “I know what I like to do” and “within DMT I learned something about it” shows the highest significance in the POST-POST 2 comparison with a t-value of 3.850 and p=0.000. Significant **correlations** were found between some items (Table 2): between **mood** after DMT and **pain** during and after DMT with **group** and **music**. The item ‘**movement intensifies pain**’ correlates with **direct and bound movement**. A strong correlation was found between ‘I know what I like to do’ and ‘I consciously act accordingly’. Furthermore, correlations were found between the **therapist’s attitude** and **creativity**, ‘**adapting movements to physical possibilities**’ and ‘**bringing in requests**’.

The results of the open questions. ‘What motivates you to participate in DMT?’ (No.13) and ‘What could be the strongest effect for you in DMT?’ (No.14) are listed in Table 2 in percentages by frequency of mention. There is a clear preference for movement 34%, therapy program (compulsory participation) 25%, joy/fun 19%, pain relief/distraction from pain 19%, group/community/conviviality 16%, experiencing/trying new things 16%, music 13% as motivation for DMT after treatment (POST). For impact (question 14), movement 50%, joy/fun/playful 41%, pain relief/distraction from pain 31%, music/rhythm 22%, group/community/sociability 16%. Diversity 6.25% indicated. These results complement the results of the scaled questions: **joy/fun, group, movement, and shifting the focus of pain** are the most important factors for the patients that contribute to their motivation for DMT.

## Discussion

Overall, this study suggests that DMT in the context of multi modal pain management is generally perceived by patients to be effective, even if not all people benefit from it. The items that showed the clearest significance and effect size were mood, movement, music and motivation, and therapist attitude, as well as joy/fun, group, movement and shift in pain focus indicated in the responses to the open-ended questions. As the correlations indicate the items are mutually dependent and effect in their entirety. Even if broken down into its individual parts for research purposes, DMT is to be considered as effective as a whole.

The results are reinforced by the studies mentioned in the introduction. The influence of therapist attitude was described by Shim [11]. She recommends that therapists “provide non-judgmental and non-forceful therapeutic support and kinesthetic empathy” for pain patients. Shim

revealed that DMT contributes to activate patients, augment self-competence and resilience in patients, diminish, accept and integrate perceived pain and stabilize emotional health [11]. DMT for patients with chronic pain has a positive effect on mood as well as on psychological and physiological well-being and the reduction of pain as Ehrhardt [8] could show. The survey of Bojner-Horwitz [9] underlines the positive effects of DMT for people suffering from fibromyalgia, which was taken into account in the meta-analysis of Murillo-Garcia et al. [13]. The review underlines the reduction of pain, positive impact of quality of life and body, reduction of anxiety and depression. In addition, after DMT, music was mentioned by the patients as an influencing factor on the therapy process [9].

Patients perceive the positive effect of DMT themselves. Participants specify group support and joy during the sessions as motivating, in addition to therapist attitude and support. As a result the patients report decreased pain and increased mood and movement activation. Movement is especially important for MMPT as patients often start the program showing avoidance behavior and movement restrictions due to their pain. This is accompanied by limitations in social life as well as in flexibility of thinking. One of the most important goals of MMPT is to get people moving (again). If, in addition, this succeeds with joy and fun, an important contribution to treatment has been made.

The DMT specific questions in POST 2 attempted to explore to what extent the positive trend is due to DMT or to the entirety of the treatments. The lack of a control group, one of the limitations of the study, is due to the clearly regulated therapy program: The patients commit themselves to participate in all therapy offers at the beginning of the program. In this context, it was not possible to provide a waiting or control group. In the future, a comparative study would be interesting to compare the differences and similarities of the therapies (e.g. physiotherapy, Qi Gong, occupational therapy, behavioral therapy) within the program. In this way, it might be possible to work out how the individual methods complement each other and where the respective strengths of each method lie. The non-validated questionnaire developed from the hypotheses shows clear limitations in the evaluation of this survey, which reveals weaknesses in the methodology e.g. the hypotheses, the questions, selection and justification of statistical methods. The fact that the author conducting the study was also the dance movement therapist can be seen as both an advantage and a disadvantage. The insight into the practice may have facilitated and supported the study design. However, this might have influenced the patients' responses. The open questions were placed at the end of the questionnaire. It is possible that the answers of the participants were directed in a certain direction. Due to the practical approach of the author, the questionnaire could be developed in connection with the experiences of the practitioner, thus making the patient's point of view and clear indications of the effect of DMT in the context of MMPT visible.

Mixed-methods, with the combination of open and scaled questions has proven to be insightful. Further research on the topic of the therapist's attitude as a therapeutic factor seems particularly interesting for the effect of DMT, as well as the question of patient participation.

Finally, the study highlighted the effectiveness of DMT from the patients' viewpoint. This perspective was thus given a voice. Desirably, the importance of DMT for MMPT should be underpinned in further studies with different foci.

## Notes

### Competing interests

The author declares that she has no competing interests.

## Attachments

Available from <https://doi.org/10.3205/jat000019>

- Attachment1\_jat000019.pdf (99 KB)  
– PRÄ – Fragebogen Wirkfaktoren der TT im Rahmen der Multimodalen Schmerztherapie
- Attachment2\_jat000019.pdf (94 KB)  
– POST – Fragebogen Wirkfaktoren der TT im Rahmen der Multimodalen Schmerztherapie

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