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Analyses of Patient-Reported Outcome Measures after an average of six sessions of Haptotherapy in approximately three months

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Abstract

Background: This study aimed to determine whether patient-reported outcome measures after an average of six sessions of haptotherapy in approximately three months differ per indication for patients' five most frequent self-reported indications.

Method: From 1 April 2023 to 1 April 2024, 72 healthcare haptotherapists invited new patients aged 18 years or older to participate in this research. Participants completed a digital questionnaire at home, once at the start of the therapy and once three months after the beginning. The digital questionnaire comprised sociodemographic questions, the Haptotherapeutic Well-being Questionnaire, the Scale of Body Connection, the Four-Dimensional Symptom Questionnaire, and the Pain Catastrophizing Scale.

Results: The first questionnaire was completed by 772 patients, of which 550 were included and categorized into five groups, which were compiled based on the five most frequent self-reported indications for haptotherapy. These indications were (1) stress- or tension-related complaints or burnout complaints (33.9%), (2) request for help concerning personal development (14.5%), (3) fear complaints (8.7%), (4) persistent physical complaints (7.5%) and (5) traumatic experiences (6.6%). Of the patients in the five most frequent self-reported indications groups who completed the first questionnaire before the start of the therapy, 329 (59.8%) completed the second questionnaire after three months of therapy and these were used for analysis. There were no significant differences between the five indication groups concerning the mean T1-T2 sum scores of well-being, body awareness, distress, depression, fear and somatization.

Conclusion: The trend in all indication groups was the same: after an average of six sessions of haptotherapy in approximately three months, participants experienced a statistically significant and clinically relevant increase in well-being and body awareness and reduction of mental health complaints. To confirm this trend, it is necessary to conduct adequate haptotherapy-evaluation research with a long-term follow-up.

Keywords: Haptotherapy, Indications for Haptotherapy, Patient Reported Outcome Measures, PROMs.

Background

Haptotherapy (HT) is a field in healthcare where the haptotherapist helps patients open themselves to their own and other people's feelings, i.e., to make patients aware of their ability to feel and to let them experience these feelings for themselves. To this end, the healthcare haptotherapist uses insightful conversations, body-oriented experiential exercises, and affective contact-oriented therapeutic touch (Plooij, 2015; Klabbers, 2020; Klabbers, Boot, Dekker & Hagg, 2024).

Patients consult a haptotherapist with a wide variety of complaints. Patients' self-reported indications are anxiety complaints, fear of childbirth, burnout complaints, chronic pain complaints, depression complaints, need for help regarding cancer, eating disorder, hyperventilation, problems with intimacy and proximity, adverse sexual experiences, personal development, post-corona complaints, PTSD complaints, mourning and loss, relational issues, sleeping problems, somatically unexplained physical complaints, stress complaints, vaginismus, pregnancy and giving birth (Klabbers & Vingerhoets, 2021b).

In a study of Klabbers and Vingerhoets (2021b), patients' (n=640) five most self-reported frequent indications for haptotherapy were stress- or tension-related complaints or burnout complaints, request for help concerning personal development, anxiety complaints and depression complaints.

A survey among haptotherapists (n=239) showed that the five most common indications were stress- or tension-related complaints or burnout complaints, request for help concerning personal development, anxiety complaints, persistent physical complaints and traumatic experiences (Haptotherapie op de kaart, 2022).

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In recent years, scientific research has shown the beneficial effects of HT in several patient groups. In people with cancer, HT contributes to a reduction of pain, stress and other physical complaints, to a decrease in panic and anxiety, and to improved perceived social and cognitive functioning, well-being and quality of life (Berg, Visser, Schoolmeesters, Edelman, & van den Borne, 2006).

A recent study showed that people with cancer mainly consult a haptotherapist because they feel that they have lost connection with and confidence in their body (Swaay, Vissers, Engels & Groot, 2021).

In pregnant women fearing childbirth, HT substantially reduces their fear (Klabbers, Wijma, Paarlberg, Emons & Vingerhoets, 2017). Moreover, after HT, the mother's well-being improves by decreasing prenatal distress and depression symptoms and fewer post-traumatic stress symptoms after delivery (Klabbers, Wijma, Paarlberg, Emons & Vingerhoets, 2017). HT in pregnant women with severe fear of childbirth also has a positive effect on mother-child bonding (Klabbers, Paarlberg & Vingerhoets, 2018).

In people with chronic pain, HT has a positive effect on increasing body awareness, decreasing pain and catastrophizing, and reducing stress and anxiety (Klabbers & Vingerhoets, 2021a).

However, although most patients are very satisfied with their haptotherapist (Klabbers & Vingerhoets, 2021b), the aforementioned results cannot be generalized to all patient groups without additional studies. In particular, it is unclear whether HT works equally well for all complaints for which patients consult a haptotherapist. Therefore, this study aimed to determine whether the PROMs for patients' five most frequent self-reported indications differs per indication.

Research questions

1. Which are patients' five most frequent self-reported indications for HT?
2. What are the patients-reported outcome measures concerning well-being, body awareness, distress, depression, fear, somatization and pain catastrophizing for patients' five most frequent self-reported indications for HT?
3. Is there a difference in patient-reported outcome measures concerning well-being, body awareness, distress, depression, fear, somatization and pain catastrophizing for patients' five most frequent self-reported indications for HT?

Method

Design

From 1 April 2023 to 1 April 2024, 72 healthcare haptotherapists invited their new patients aged 18 years or older to participate in this research. Patients willing to participate received the URL of the research website and a personal login code and were asked to sign an Informed Consent form. Next, participants were requested to complete a digital questionnaire at home, once at the start of the therapy and once approximately three months after the start of the therapy. After the questionnaire had been completed, the anonymized outcome was automatically sent by e-mail to the relevant haptotherapist so that the information provided at the start of the therapy could immediately be included in the intake and the information provided after three months could be used for evaluation purposes.

Exclusion criteria

Based on the anamnesis, it is determined whether patients are familiar with psychiatric symptoms and whether they are (or have been) in treatment with a psychologist and/or psychiatrist. Eligible persons were excluded if they had severe psychiatric symptoms that were insufficiently under control, making an effective treatment relation impossible even with the support of psychiatric cotreatment. Furthermore, they were excluded if language or communication barriers made it impossible for them to participate in HT.

Ethical Approval

The participating patients were treated following the quality policy of the Association of Haptotherapists in the Netherlands. The Medical Ethical Review Committee of Brabant decided that this scientific research is not subject to the Medical Research Involving Human Subjects Act (WMO). Subsequently, the study was approved by the Ethical Review Committee of Tilburg University (ETC), which assesses the scientific and ethical aspects of research projects that are not subject to the WMO.

Intervention

HT was applied following the quality policy and professional code of the Dutch Association of Haptotherapists and in accordance with specific relevant guidelines for the treatment of people with chronic pain and for pregnant women with fear of childbirth (Werkgroep Chronische pijn, 2022; Werkgroep Bevallingsangst, 2022).

Measures

The digital questionnaire that was used in this study comprised sociodemographic questions, the Haptotherapeutic Well-being Questionnaire (HWS) (Klabbers & Vingerhoets, 2022), the Dutch version of the Scale of Body Connection (SBC) (Maas, Köke, Bosscher, Hoekstra, & Peters, 2015), the Four-Dimensional Symptom Questionnaire (4DSQ) (Terluin et al, 2006), and the Dutch version of the

Pain Catastrophizing Scale (PCS) (Osman, Barrios, Kopper, Hauptmann, Jones, & O'Neill, 1997).

The HWS is a compilation of fourteen clinical questions answered on a 5-point Likert scale (Likert, 1932). The questionnaire gives an impression of a person's well-being from a haptotherapeutic perspective (Klabbers & Hagg, 2021). The Cronbach's Alpha of the HWS ranged from .78 to .89, measured at three different time points in a study (n=24) on the effects of HT on patients with chronic pain (Klabbers & Vingerhoets, 2021a), and .86 in an exploratory study (n=640) of the Haptotherapeutic Well-being Scale (Klabbers & Vingerhoets, 2022).

Klabbers and Vingerhoets (2022) demonstrated significant strong correlations of all five HWS subscales with the 5-item World Health Organization Well-Being Index (WHO-5) sum score and a significant strong correlation of the HWS sum score with the WHO-5 sum score. Klabbers and Vingerhoets (2022) recommend further research to confirm the reliability and validity of the HWS, and its sensitivity to detect change.

The SBC (Price, Thompson, & Cheng, 2017), Dutch translation (Maas, Köke, Bosscher, Hoekstra, & Peters, 2015), measures the degree of body awareness and body dissociation and consists of twenty statements, twelve of which measure body awareness and the remaining eight measure body dissociation. The SBC is mainly used in therapies to improve the connection between mind and body, for instance, in case of physical symptoms for which there is no sufficient medical explanation. Cronbach's Alpha for physical awareness is 0.72 and for physical dissociation 0.63 (Price & Thompson, 2007). The SBC has an acceptable reliability for both the body awareness and bodily dissociation scales (Price, Thompson & Cheng, 2007).

The 4DSQ comprises 50 items concerning psychological and psychosomatic symptoms listed in the DSM-4 (American Psychiatric Association, 1994). Symptoms of distress, anxiety, depression, and somatization are measured as separate dimensions (Terluin et al., 2006). The 4DSQ scales have a high internal consistency (Cronbach's Alpha: 0.84 to 0.94) (Terluin et al., 2006). The 4DSQ is frequently used in HT (Klabbers, 2013), and is included in the reporting guideline for HT (Intramed, 2022). The 4DSQ is a valid self-report questionnaire to measure distress, depression, anxiety and somatization in primary care patients (Terluin et al., 2013).

The PCS (Sullivan, Bisschop & Pivik, 1995; Damme, 2002) is a self-assessment questionnaire that measures catastrophizing in clinical and nonclinical populations. Catastrophizing is generally described as an overly negative orientation to harmful stimuli and plays an essential role in the experience and management of pain. The PCS consists of thirteen statements describing thoughts and feelings one can experience when suffering from pain. The items are divided into the categories rumination, magnification, and helplessness, and each item is scored on a 5-point Likert scale. The PCS total score and the separate PCS subscales correlate significantly with the Inventory of Negative Thoughts in Response to Pain (Osman, Barrios, Kopper, Hauptmann, Jones, & O'Neill, 1997).

Analysis

For analysis we focused per indication on the subgroups of the participants with high 4DSQ-T1-scores, a low SBC-T1-score, a low HWS-T1-score and a high PCS-T1-score. A repeated measures ANOVA was applied to determine whether or not there was a statistically significant difference between the mean T1-T2 sum scores of the five indication groups, concerning well-being, body awareness, distress, depression, fear, somatization and pain catastrophizing. Additionally, a Last Observation Carried Forward (LOCF) analysis was performed.

A Cohens d $\geq$ 8 was defined as clinically relevant.

Results

Indications for HT

Patients' five most frequent self-reported indications for HT were (1) stress- or tension-related complaints or burnout complaints (33.9%), (2) request for help concerning personal development (14.5%), (3) fear (8.7%), (4) persistent physical complaints (7.5%) and (5) traumatic experiences (6.6%). Of the 772 patients who completed the first questionnaire, 550 were included as patient's five most frequent self-reported indications for HT, of which 329 (59.8%) also completed the second questionnaire. Thirteen participants stopped already after two sessions of HT (intake and first treatment-session) for various reasons, including, for example, being on the waiting list for an operation and then suddenly being called up for the operation or starting another therapy. These thirteen participants completed the questionnaires at T1 and T2. They were included in the study, although they did not have much treatment. See table 1 for sociodemographic details. The category others (see table 1), consists of several subgroups: depression, hyperventilation, psychosomatics, grief and loss, relationship, pregnancy, birth and fear of childbirth.

Unfortunately, we failed to register why some patients did not respond to the request to complete the second questionnaire after three months of therapy. These so-called non-responders (n=221) were evenly distributed across the five included indication groups: 40.1%, 39.3%, 40.3%, 41.4% and 41.2%, respectively. The non-responders group consisted of 30.7% men and 69.5% women. In the responders group these percentages were 25.7 and 74.3, respectively.

Table 1

Baseline patient characteristics per indicationgroup

Indicationgroups	Burnout		Development		Fear		PPC		Trauma		Others	
Age in years > 18 (*M*)	43 (*Sd*:12)		(44 *Sd*:12)		42 (*Sd*:14)		45 (*Sd*:13)		41 (*Sd*:12)		42 (*Sd*:12)	
	262		112		67		58		51		222	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%
Women	204	77.9	78	69.6	45	67.2	45	77.6	43	84.3	173	77.9
Men	58	22.1	34	30.4	22	32.8	13	22.4	8	15.7	49	22.1
Single	59	22.5	42	37.5	20	29.9	11	19	22	43.1	69	31.1
Has children	165	63.0	67	59.8	39	58.2	34	58.6	30	58.8	137	61.7
Education												
Primary education	1	0.4	1	0.9	0	0.0	1	1.7	0	0.0	2	0.9
Secondary vocational education	47	17.9	22	19.6	8	11.9	15	25.9	10	19.6	44	19.8
Higher professional education	132	50.4	51	45.5	32	47.8	28	48.3	23	45.1	105	47.3
Scientific education	82	31.3	38	33.9	27	40.3	14	24.1	18	35.3	71	32.3

Burnout: Stress- or tension-related complaints or burnout complaints. Development: Request for help regarding personal development. Fear: anxiety complaints. PPC: Persistent Physical Complaints.Trauma: traumatic experience.

Patient experiences

After an average of six sessions of HT in approximately three months, patients experienced a statistically significant and clinically relevant increase in wellbeing and body awareness and decrease of mental health complaints (see table 2).

After therapy the percentage of patients with at least one score on a lower 4DSQ-subscale or one score on a higher subscale of the SBC or the HWS was 85.7%, i.e., 58.8% (4DSQ-distress), 70.8% (4DSQ-depression), 61.4% (4DSQ-fear), 48.2 % (4DSQ-somatization), 45.9% (SBC-body-awareness) and 60.6% (HWS-wellbeing).

The mean T1-scores of the non-responders were: 41.3 (HWS), 3.9 (SBC), 21.7 (Distress), 3.8 (Depression), 8.6 (Fear), 17.5 (Somatization).

Table 2

Mean differences between PROMs overtime T1-T2

		T1			T2			T1-T2	
Indications	Questionnaires	*M*	*SD*	*Range*	*M*	*SD*	*Range*	*MD*	*d*
Burnout	HWS (T1-score < 46: *n* = 116)	37.8	5.3	22-45	47.8	7.1	26-64	10.0	1.6 **
N = 155	SBC (T1-score < 4: *n* = 86)	3.6	0.3	2.3-4.0	3.9	0.4	3.0-4.8	0.3	0.9 **
	4DSQ-Distress (T1-score > 10: *n* = 149)	23.1	5.9	11-32	15.4	8.1	0-31	-7.7	1.1 **
	4DSQ-Depression (T1-score > 2 : *n* = 89)	6.5	2.9	3-12	3.1	3.2	0-12	-3.4	1.1 **
	4DSQ-Fear (T1-score > 8: *n* = 68)	12.5	3.2	9-20	7.1	4.4	0-18	-5.4	1.4 **
	4DSQ-Somatisation (T1-score > 10: *n* = 126)	19.5	5.1	11-31	14.2	6.7	0-29	-5.4	0.9 **
Development	HWS (T1-score < 46: *n* = 44)	39.0	4.5	28-45	47.1	7.4	26-64	8.1	1.4 **
N = 71	SBC (T1-score < 4: *n* = 40)	3.6	0.3	2.9-4.0	4.0	0.4	3.0-5.6	0.3	0.9 **
Fear	HWS (T1-score < 46: *n* = 28)	37.8	4.9	25-45	48.5	6.6	38-61	10.7	1.9 **
N = 40	SBC (T1-score < 4: *n* = 22)	3.6	0.3	3.0-4.0	4.0	0.4	2.9-4.8	0.4	1.0 *
	4DSQ-Distress (T1-score > 10: *n* = 35)	22.4	4.7	12-32	12.9	7.6	2-32	-9.5	1.5 **
	4DSQ-Depression (T1-score > 2: *n* = 18)	6.4	3.1	3-12	2.4	3.3	0-9	-4.0	1.3 **
	4DSQ-Fear (T1-score > 8: *n* = 23)	14.2	4.2	9-24	6.7	5.2	0-21	-7.5	1.6 **
	4DSQ-Somatisation (T1-score > 10: *n* = 32)	19.0	5.5	12-30	12.5	7.1	2-29	-6.5	1.0 **
PPC	HWS (T1-score < 46: *n* = 18)	41.3	2.5	35-45	49.3	6.4	40-66	8.0	1.8 **
N = 33	SBC (T1-score < 4: *n* = 14)	3.6	0.4	2.6-3.9	4.0	0.3	3.4-4.6	0.4	1.2 *
	4DSQ-Distress (T1-score > 10: *n* = 29)	18.3	5.6	11-30	11.8	5.3	2-26	-6.6	1.2 **
	4DSQ-Depression (T1-score > 2 : *n* = 9)	7.0	3.0	3-12	3.8	4.0	0-10	-3.2	0.9
	4DSQ-Fear (T1-score > 8: *n* = 6)	10.7	1.6	9-13	5.5	4.3	1-11	-5.2	1.8 *
	4DSQ-Somatisation (T1-score > 10: *n* = 26)	18.4	5.4	11-29	12.0	5.5	0-21	-6.4	1.0 **
	PCS (T1-score > 26: *n* = 18)	36.2	7.3	27-50	27.1	10.9	13-48	-10.5	1.0 *
Trauma	HWS (T1-score < 46: *n* = 25)	38.0	5.9	24-25	46.7	8.3	28-60	8.7	1.2 **
N = 30	SBC (T1-score < 4: *n* = 17)	3.7	0.2	3.3-4.0	3.9	0.3	3.3-4.4	0.2	0.9 *
	4DSQ-Distress (T1-score > 10: *n* = 30)	23.3	6.7	11-32	15.5	8.7	3-32	-7.8	1.2 **
	4DSQ-Depression (T1-score > 2: *n* = 15)	7.3	2.6	4-12	3.1	3.7	0-10	-4.3	1.4 **
	4DSQ-Fear (T1-score > 8: *n* = 14)	14.2	3.5	9-21	7.9	5.6	0-20	-6.3	1.4 **
	4DSQ-Somatisation (T1-score > 10: *n* = 25)	19.5	6.1	11-31	14.0	7.7	1-30	-5.5	0.8 *

PROMs: Patient Reported Outcome Measures. T1: Baseline measurement. T2: Three months after the start of haptotherapy. HWS Haptotherapeutic Wellbeing Scale. SBC: Scale of Body Connection. 4DSQ: Four-Dimensional Symptom Questionnaire. Burn-out: Stress or tension related complaints or burnout complaints. Development: Request for help regarding personal development, for which they completed the HWS and the SBC. Fear: Anxiety complaints. PPC: Persistent Physical Complaints. PCS: Pain Catastophizing Scale. Trauma: Traumatic expierences. T1-T2: For analysis we focussed per indication on the participants with high 4DSQ-T1-scores, a low SBC-T1-score, a low HWS-T1-score and a high PCS-T1-score. *M*: Mean. *SD*: Standaarddeviatie. *MD*: Mean Difference. *d*: Cohens d. * Significant at the .05 level. ** Significant at the .001 level.

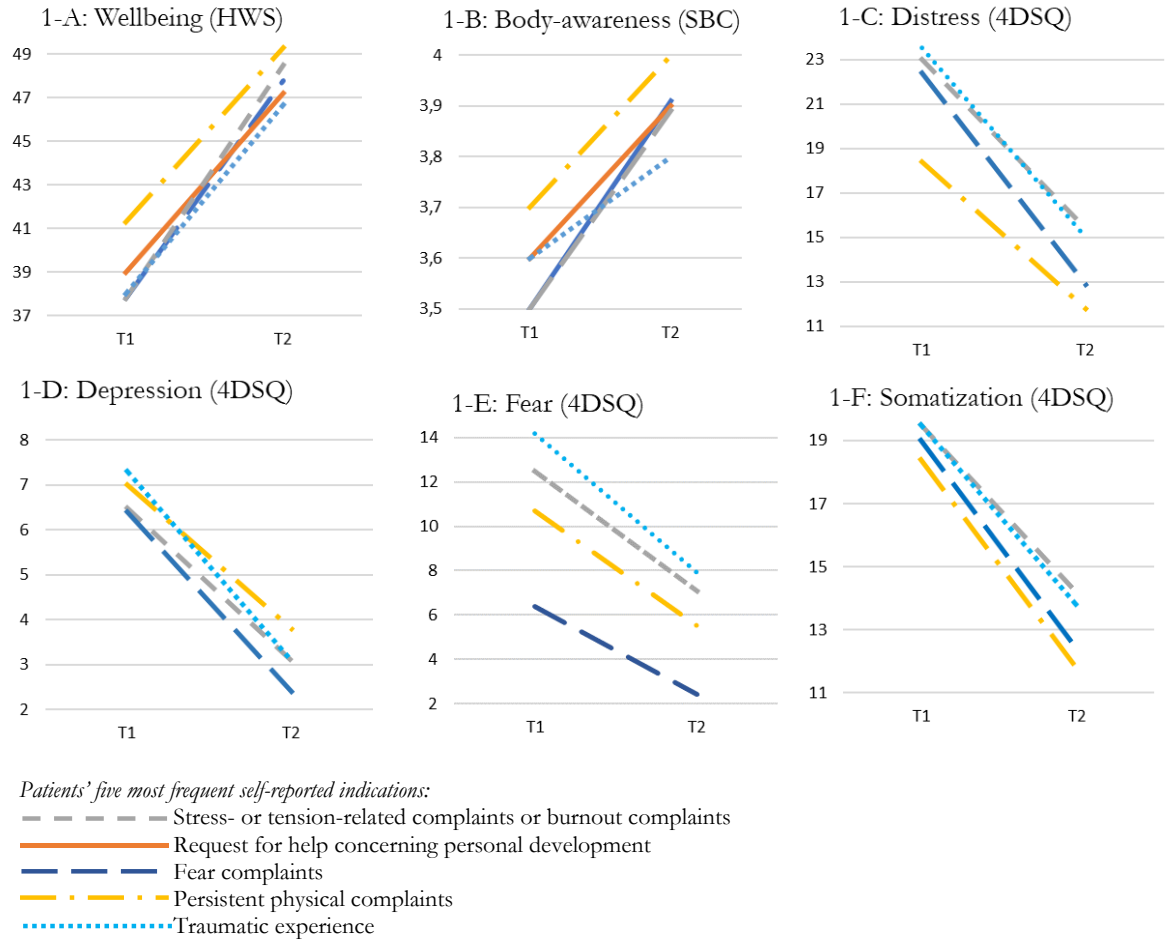
Differences in patient experiences

The results show a significant strong relationship between wellbeing and distress (r (1069) = -.685, p < .001) as well as a strong relationship between the wellbeing T1-T2 sum score and the distress T1-T2 sum score (r (384) = -.554, p < .001). The correlations between well-being and depression, fear, somatization and body awareness were as follows: (r (1069) = -.583, p < .001), (r (1069) = -.499, p < .001), (r (1069) = -.420, p < .001) and (r (1226) = .059, p < .001), respectively. The correlations between the well-being T1-T2 sum score and the T1-T2 sum scores depression, fear, somatization and body awareness were: (r (484) = -.394, p < .001), (r (384) = -.440, p < .001), (r (384) = -.267, p < .001), and (r (384) = .025, p = .599), respectively.

Comparison of the patient-reported outcome measures for the five indication groups by means of ANOVA showed no significant differences between the sumscores of Wellbeing (F (4,324) = 1.125, p = .345), Body Awareness (F (4,324) = .780, p = .539), Distress (F (3,254) = .619, p = .603), Depression (F (3,254) = 2.397, p = .069), Fear (F (3,254) = 2.401, p = .068) and Somatization (F (3,254) = .201, p = .896). The trend in all indication groups was the same, i.e., after an average of six sessions of HT in approximately three months, patients experienced more wellbeing, more body awareness and less mental health complaints, see figure 1.

Figure 1

Mean scores T1 and T2 for patients' five most frequent self-reported indications



Last Observation Carried Forward analysis

Since drop-outs may have led to a selection bias, we also performed an LOCF analysis for each of the five self-reported indications concerning well-being, body awareness, distress, depression, fear, and somatization.

For well-being measured with the HWS, a statistically significant large increase could be determined in the indication groups: stress- or tension-related complaints or burnout complaints, request for help concerning personal development, fear complaints, traumatic experiences, and a statistically significant moderate increase in the indication group persistent physical complaints. In the first four indication groups, a statistically significant moderate increase could be observed for body awareness measured with the SBC. The LOCF analysis showed no significant changes for body awareness in the indication group traumatic experiences. See Table 3 for the complete LOCF analysis.

Table 3
Mean differences between PROMs overtime T1-T2

		T1			T2			T1-T2	
Indications	Questionnaires	*M*	*SD*	*Range*	*M*	*SD*	*Range*	*MD*	*d*
Burnout	HWS (T1-score < 46: *n* = 201)	38.0	5.1	22-45	43.7	7.9	24-64	5.8	0.9 **
N = 262	SBC (T1-score < 4: *n* = 145)	3.6	0.3	2.3-4.0	3.8	0.4	2.9-4.8	0.2	0.6 **
	4DSQ-Distress (T1-score > 10: *n* = 250)	23.0	5.9	11-32	18.5	8.2	0-32	-4.6	0.6 **
	4DSQ-Depression (T1-score > 2 : *n* = 145)	6.5	2.9	3-12	4.4	3.5	0-12	-2.2	0.7 **
	4DSQ-Fear (T1-score > 8: *n* = 110)	13.3	3.6	9-24	10.0	5.6	0-24	-3.3	0.7 **
	4DSQ-Somatisation (T1-score > 10: *n* = 216)	19.6	5.4	11-31	16.5	6.9	0-31	-3.1	0.5 **
Development	HWS (T1-score < 46: *n* = 74)	39.3	4.1	28-45	44.1	7.1	28-64	4.9	0.9 **
N = 112	SBC (T1-score < 4: *n* = 70)	3.6	0.3	2.8-4.0	3.8	0.4	2.8-5.6	0.2	0.6 *
Fear	HWS (T1-score < 46: *n* = 50)	37.5	6.0	17-45	8.8	1.3	17-61	6	0.8 **
N = 67	SBC (T1-score < 4: *n* = 38)	3.6	0.3	2.7-4.0	3.8	0.4	2.7-4.8	0.2	0.6 *
	4DSQ-Distress (T1-score > 10: *n* = 60)	23.4	5.2	12-32	17.9	9.0	2-32	-5.6	0.8 **
	4DSQ-Depression (T1-score > 2: *n* = 36)	7.3	3.5	3-12	5.3	4.5	0-12	-2.0	0.3 *
	4DSQ-Fear (T1-score > 8: *n* = 44)	14.8	4.5	9-24	10.8	6.7	0-24	-3.9	0.7 *
	4DSQ-Somatisation (T1-score > 10: *n* = 56)	20.3	6.3	11-32	16.5	8.5	2-32	-3.7	0.5 *
PPC	HWS (T1-score < 46: *n* = 33)	39.7	4.0	30-45	44.0	8.1	30-66	4.3	0.7 *
N = 58	SBC (T1-score < 4: *n* = 26)	3.6	0.3	2.6-3.9	3.8	0.3	3.3-4.6	0.2	0.5 *
	4DSQ-Distress (T1-score > 10: *n* = 49)	20.0	5.7	11-32	16.1	7.4	2-32	-3.9	0.6 *
	4DSQ-Depression (T1-score > 2 : *n* = 20)	6.7	2.9	3-12	5.3	3.6	0-12	-1.5	0.4
	4DSQ-Fear (T1-score > 8: *n* = 13)	12.7	3.8	9-22	10.3	6.2	1-22	-2.4	0.4
	4DSQ-Somatisation (T1-score > 10: *n* = 47)	18.3	4.8	11-29	14.7	5.8	0-25	-3.5	0.7 *
	PCS (T1-score > 26: *n* = 38)	35.7	6.8	27-50	30.1	9.4	13-50	-5.6	0.7 *
Trauma	HWS (T1-score < 46: *n* = 38)	38.6	5.3	24-45	44.3	7.9	28-60	5.7	0.8 **
N = 51	SBC (T1-score < 4: *n* = 27)	3.6	0.3	3.0-4.0	3.8	0.4	3.0-4.4	0.1	0.4
	4DSQ-Distress (T1-score > 10: *n* = 50)	22.1	6.4	11-32	17.4	7.9	3-32	-4.7	0.7 *
	4DSQ-Depression (T1-score > 2: *n* = 24)	6.8	2.7	3-12	4.1	3.6	0-12	-2.7	0.9 *
	4DSQ-Fear (T1-score > 8: *n* = 21)	15.5	4.1	9-23	11.3	7.0	0-23	-4.2	0.8 *
	4DSQ-Somatisation (T1-score > 10: *n* = 38)	19.7	5.5	11-31	16.1	7.3	1-30	-3.6	0.6 *

PROMs: Patient Reported Outcome Measures. T1: Baseline measurement. T2: Three months after the start of haptotherapy. HWS Haptotherapeutic Wellbeing Scale. SBC: Scale of Body Connection. 4DSQ: Four-Dimensional Symptom Questionnaire. Burn-out: Stress or tension related complaints or burnout complaints. Development: Request for help regarding personal development, for which they completed the HWS and the SBC. Fear: Anxiety complaints. PPC: Persistent Physical Complaints. PCS: Pain Catastophizing Scale. Trauma: Traumatic expierences. T1-T2: For analysis we focussed per indication on the participants with high 4DSQ-T1-scores, a low SBC-T1-score, a low HWS-T1-score and a high PCS-T1-score. *M*: Mean. *SD*: Standaarddeviatie. *MD*: Mean Difference. *d*: Cohens d. * Significant at the .05 level. ** Significant at the .001 level.

Discussion

In this research, patients' five most frequently self-reported indications for HT were (1) stress- or tension-related complaints or burnout complaints (33.9%), (2) a request for help concerning personal development (14.8%), (3) fear (8.8%), (4) persistent physical complaints (7.4%) and (5) traumatic experiences (6.5%). This aligns with previous studies (Klabbers & Vingerhoets, 2021b; Haptotherapie op de kaart, 2022).

The indication 'stress- or tension-related complaints or burnout complaints' was the most frequent reason to visit a health care haptotherapist. Moreover, in this study, 89% of the patients with another self-reported indication also had an increased distress score, which is in accordance with a study by the Dutch organization 'Haptotherapie op de kaart' (2022), which showed that 96% of the health care haptotherapists who participated in that study (*n*=214) reported that 'stress- or tension-related complaints or burnout complaints' is the most important indication for haptotherapy. However, according to the participating healthcare haptotherapists in the present study, it often turned out over time that there were underlying problems, such as traumatic experiences or relationship problems.

After an average of six sessions HT in approximately three months, patients with self-reported stress- or tension-related complaints or burnout complaints experienced a statistically significant and clinically relevant increase in wellbeing and body awareness and decrease of mental health complaints. The same was true for patients with a request for help concerning personal development, fear complaints, and persistent physical complaints and for patients who had suffered a traumatic experience (except for depression complaints in the indication group persistent physical complaints, for which we could not determine a statistically significant difference).

The PROMs were the same in all five indication groups, i.e., we found no statistically significant differences between the T1-T2 sum scores of well-being, body awareness, distress, depression, fear and somatization.

Patients experienced a statistically significant and clinically relevant sizeable positive increase in well-being and body awareness in all five indication groups.

However, there was no significant correlation between the T1-T2 sum scores of the SBC and the HWS. There are several possible explanations for this finding. Firstly, contrary to what is assumed in HT, there could be no relationship between body-awareness and well-being. Secondly, according to the participating healthcare haptotherapists, increased body awareness sometimes leads to increased physical complaints before the complaints decrease. Thirdly, as body awareness increases, it will take a little longer before well-being increases. The participating healthcare haptotherapists suggested a second follow-up measurement, for example after six months. Fourth, the SBC measures the object-body awareness. At the same time, HT focuses on the subject-body, i.e., the affective contact-oriented therapeutic touch from the healthcare haptotherapists makes the patients feel that they can be present, exactly as they are. It confirms them as the person they are, and perhaps that cannot be measured at all with existing questionnaires on body awareness.

This research has some dropouts, which may have led to a selection bias. Therefore, also a LOCF analysis was performed. The LOCF analysis is not without controversy, because the LOCF analysis itself may also introduce a bias by imputing values based on observed data, especially if the treatment results in adverse side effects (Mavridis, Salanti, Furukawa, Cipriani, Chaimani, & White, 2019).

For well-being measured with the HWS, a statistically significant large increase could be determined in the indication groups: stress- or tension-related complaints or burnout complaints, requests for help concerning personal development, fear complaints, traumatic experiences, and a moderate increase in the indication group persistent physical complaints. This confirms the trend that after an average of six sessions of haptotherapy in approximately three months, participants experienced a statistically significant and substantial increase in well-being.

A similar trend can be observed for body awareness measured with the SBC, i.e., a statistically significant large increase could be determined in the analysis without drop-outs and a statistically significant moderate increase in the analysis with drop-outs.

The analysis without drop-outs concerning mental health complaints measured with the 4DSQ demonstrated a statistically significant robust decrease in all domains. A comparison with the analysis with drop-outs showed variable results: some large results changed to moderate results; whereby statistical significance could not be determined for some outcome measures.

Although the trend in all indication groups was the same, based on this research does not allow to draw firm conclusions about the effectiveness of haptotherapy due to selection bias and the lack of a control group.

This is the first (exploratory) study into the effect of HT in which the results of the questionnaires were sent directly to the therapists for use in therapy. According to the healthcare haptotherapists using questionnaires in HT provided more clarity about the patient's problems and resilience and it helped to determine the goal of the therapy. For future HT studies, this finding can encourage the use of questionnaires.

Limitations

The study was not randomized, and there was no care as usual control group. Of the patients in the five most frequent self-reported indications groups who completed the first questionnaire before the start of the therapy, 59.8 % also completed the questionnaire three months after or earlier if it was stopped. So, there were drop-outs in these groups, which may have led to a selection bias. Therefore, we also performed a LOCF analysis.

Strengths

This is the first (exploratory) study into the effect of HT, in which the questionnaire results are sent directly to the therapists for use in therapy.

Recommendations for future research

The most common patients' self-reported indication for HT is stress- or tension-related complaints or burnout complaints. Lindeboom, van Rijsselberg, te Wechel, Zandvliet, and Havik (2012) published some case descriptions about treatment burnout with HT.

The next step could be a three-arm Randomized Controlled Trial with (1) a HT group, (2) another therapy group and (3) a control group care as usual.

In addition to such a quantitative study, qualitative research should be conducted on the impact of an affective therapeutic mode of being in relation to the patient.

Conclusion

The trend in all indication groups was the same. After an average of six sessions of haptotherapy in approximately three months, participants experienced a statistically significant and clinically relevant increase in well-being and body awareness and reduction of mental health complaints. To confirm this trend, it is necessary to conduct adequate haptotherapy-evaluation research with a long-term follow-up.

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Contributions from the authors

This article was written by GAK and AJJMV. Both authors have read and approved the final version of this article.

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