

The clinical effectiveness of haptotherapy in routine practices

Anne van Leeuwen

Cheraly Pluimers

Ruud Bosscher

VU University Amsterdam

Faculty of Human Movement Sciences

Final Report

Amsterdam, October 25, 2012

Abstract

Background: Haptotherapy is the therapeutic application of haptonomy. Touch and feeling are the central characteristic of this therapy. There is a lack of evidence of the effectiveness of this therapy, so the aim of this study was to further explore its effect in a convenience sample of clients on the psychological and somatic complaints.

Method: 257 patients were recruited by 47 therapists, 93 patients dropped-out (35.8%). Clients completed pre- and post-intervention questionnaires. The Symptom Checklist-90 (SCL-90; Derogatis, 1977; Dutch version by Arrindell & Ettema, 1986), measuring psychological and somatic complaints, was employed as primary dependent variable, while secondary measures included psychological mindedness, autonomy connectedness, body connection and touch.

Results: More than 75% of the completers showed significant improvement on the SCL-90, while the overall recovery rate was more than 50%.

Conclusion: The results suggest that haptotherapy is effective in the treatment of psychological and somatic complaints. Due to the exploratory uncontrolled nature of the study, more research is required to support the effectiveness of haptotherapy compared to control conditions.

keywords: haptotherapy; effectiveness; routine practices; treatment outcome; symptom checklist

Introduction

Haptotherapy is the therapeutic application of haptonomy (De Frangh, 2009). One of the main concepts of haptonomy is touch (Plooi, 2005). Touch is the intention to meet another and nothing to yearn (Boot, 2004). A good touch is a touch where you can feel a selfless commitment to another person. If an individual is affectively touched in the right way, he can open up to others, his environment and most importantly to himself (haptonomie.nl).

Haptotherapy originated in the fifties of the 20th century thanks to its originator Frans Veldman. He grew up between the two world wars, when society was marked by a reification of the (Western) society and human interaction when egoism grew and people lost contact with the environment and themselves. There was no time to reflect on feelings (Boot, 2004; Plooi, 2005). Departing from his experience as a physical therapist, Veldman developed a therapy (between 1987 and 2007) that centred on the meaning of touch. Therefore he coined the term 'psycho-tactical therapy' and changed it in 1962 into haptonomy (Plooi, 2005, Veldman, 2007). Haptonomy combines the two Greek words 'hapsis' and 'nomos' (nomos: a discription of a regularity). Hapsis is a concept which was already used by Aristotle and means touch, feeling and tactical perception. Hapto, of the verb haptain, means: I touch, I unite, I start a relation, I attach, I contact to heal and confirm (Plooi, 2005). Feeling and touch are closely related. Any refinement of our tactile qualities gives us a better view of our own existence, qualities and relational skills. This comes together in haptonomy (Pollmann-Wardenier, 1998). The basic idea of haptonomy is the unity between body and mind.

Whereas haptonomy considers individuals to be affective beings and haptonomy aims to (re)connect individuals with their feelings (Boot, 2004), haptotherapy is concerned to do this with clients who are unbalanced in connectedness with their feelings. In particular persons with stagnant development, trauma or problems in their interpersonal relationships are thought to benefit from haptotherapy. Other possible indicators are problems with the transition from one stage of life to the other, stress, physical symptoms with a possible psychosomatic cause and problems with acceptance of loss, illness or disability.

The main focus of haptotherapy is autonomy in terms of stimulating the patient's self-awareness (to feel). Greater self-awareness also implies a greater focus on others, and a good contact with oneself and with others gives anyone the ability not to fear new situations. Besides being self-aware and aware of others, being aware of the body is also important. Haptotherapists assume haptotherapy supports the sense and consciousness of the body and to diminish being dissociated from the body. Another important key element of haptotherapy is psychological mindedness, the importance of the patients' feelings and how to handle these feelings.

A haptotherapist works with the patient in the direction of listening to what you feel and to connect consequences. It is important that patients become more attached to their feelings and learn how to identify those feelings.

In general, the first haptotherapy appointment is to inquire the request for help related to mental and/or somatic complaints. An appointment mostly comprises of a combination of verbalization, experiential exercises and 'experiences on the treatment table'. During the appointment, contact and how this is experienced are important (Plooij, 2005 <http://www.haptotherapeuten-vvh.nl>). The therapist gives the patient feedback about posture, body tension and movement pattern. At the end of the treatment there is a period of detachment, increasing the distance between therapist and patient and the patients will learn how to trust their own feelings more.

In recent years, the Dutch Association of Haptotherapists (VVH) has focused on strengthening the position of haptotherapists in (primary) health care. An important tool to achieve this is scientific research to demonstrate its effectiveness in diminishing mental and/or somatic problems that client present. Until now, such research is very scarce and mostly unpublished. Van 't Hof, van Voorst and van Zoelen-Nederlof (1997) showed that 90% of 886 clients who were treated by haptotherapy were satisfied with the outcome. Van den Berg, Visser, Schoolmeesters, Edelman and Van den Borne (2006) investigated the effects of haptotherapy in cancer patients during their chemotherapy versus treatment-usual in a quasi-experimental design. Patients in the control group were matched with patients in the experimental condition with respect to age, gender, type of cancer, type of chemotherapy, prognosis and the period between pre- and post-test. Patients who received haptotherapy (n=31) were very satisfied with the treatment and reported a greater increase in wellbeing than control patients (n=26). De Frangh (2009) concluded that, based on self-reports of therapists, haptotherapists experienced more opening in feelings in their patients than other body-oriented therapists. However, she could not find support for some other hypotheses regarding how haptotherapy works. Klabbers (2010) reported a significant decrease in distress, depression, anxiety and somatisation in 87 patients in 10 routine practices after 7 sessions.

Due to an increased awareness of the need to investigate the effects of haptotherapy on the complaints that bring patients to haptotherapy, a new exploratory study in a convenience sample of clients was organized by the VVH. The primary focus was to study changes in psychological and somatic complaints as measured by the Symptom Checklist 90 (Derogatis, 1977). As a secondary aim, effects on a number of behaviours that are expected to be influenced by haptotherapy, such as psychological mindedness, autonomy, body connection and touch, were explored.

Method

Participants and Procedure

This research took place in first line routine practices for haptotherapy. These practices offer haptotherapy to clients with a wide range of problems. There was no standard treatment manual and the haptotherapists were not given any specific training for the purposes of the study. Patients were recruited by 47 haptotherapists throughout the Netherlands between 2010 and 2011. Each therapist was asked to recruit a maximum of 10 patients on the basis of voluntary participation. Successful recruitment differed widely between therapists, resulting in a total of 257 patients at time 1 (pre-intervention). At time 2 (post-intervention), 93 of the 257 patients (35,8%) had dropped out. The mean age of the 257 patients was 43.3 years (sd=11.8, range = 19 to 82). The majority was female (74.3%), while 25.3% was at sick leave. More than half (52.5%) had higher education and 68.5% were employed.

Therapists

Haptotherapy was performed by 47 haptotherapists (42 female and 5 male). Their mean age was 52,3 years (sd=6.7), with a range of 38 to 70 years of age. About 80% had more than 20 years experience as a therapist (M=26.5, sd=8.5), while 50% had more than 10 years experience as a haptotherapist (M=12.8, sd=6.2) with a range of 2 to 25 years.

Measures

Symptom Check List 90 (SCL90) (Derogatis, 1977; Dutch version by Arrindell & Ettema, 1986) is a self-rating scale that measures psychological complaints as a screening for psychopathology. The SCL90 comprises 90 items rated on a 5-point Likert-type scale, ranging from 1 (not at all) to 5 (very true) and provides a total score and subscores on eight facets; agoraphobia, anxiety, depression, somatic complaints, insufficiency of thinking and acting, distrust and interpersonal sensitivity, hostility and sleep problems. For the present study, subscales 'depression', 'anxiety' and 'somatic complaints' were deemed to be major and interesting domains of complaints. Lower scores indicate a better physical and psychological health. Arrindell and Ettema (1986) reported internal consistencies of the subscales between $\alpha=.84$ and $.90$ and for the total score $\alpha=.78$ and test-retest reliability of $r=.96$ over a 2-month interval.

The *Balance Index of Psychological Mindedness* (BIPM) (Nyklíček & Denollet, 2009) is a 14 item self-report scale that measures the importance of the patients' feelings and how to handle these feelings. Items are scored on a 5-point Likert-type scale, ranging from 0 (not true) to 4 (true), with higher scores indicating healthier psychological mindedness.

The BIPM scale has two dimensions, 'insight' (insight in one's internal psychological phenomena) and 'interest' (interest in one's internal psychological phenomena). Nyklíček and Denollet (2009) reported internal consistencies of $\alpha=.85$ for subscale 'interest', $\alpha=.75$ for subscale 'insight' and $\alpha=.85$ for the total BIPM scale. They also reported test-retest reliabilities of $r=.75$ over a 6-7-weeks interval for the total scale, for the subscale 'insight' $r=.71$, and for 'interest' $r=.63$.

The *Autonomy Connectedness Scale 30* (ACS30) (Bekker & Van Assen, 2006) comprises 30 items, rated on a 5-point scale (1=disagree to 5=agree). Lower scores indicate healthier autonomy, attachment and psychopathology. The ACS provides scores on 3 facets of autonomy; 'self-consciousness' (the ability to be aware of our own opinions, wishes and needs and to use these in social interaction), 'sensitivity for others' (sensitivity for opinions, wishes and needs of others, empathy and the ability to intimacy and separation) and 'ability to manage new situations' (flexibility, need to explore and independency of well-known structures). The internal consistencies of the ACS subscales 'self-consciousness', 'sensitivity for others' and 'the ability to manage new situations' are satisfactory (Bekker & van Assen, 2006).

Scale of Body Connection (SBC) (Price & Thompson, 2007; Dutch version by Van der Maas, unpublished) comprises 20 items, ranging from 1 (completely not true) to 5 (completely true) about the level of body consciousness and how the patient reacts on this body consciousness. Higher scores indicate healthier body connection. Psychometric evaluation for the Dutch version is presently underway. The original English version of the Scale of Body Connection by Price and Thompson (2007) was found to be valid and reliable. The internal consistency for the 'body awareness' subscale is $\alpha=.83$ and $\alpha=.78$ for subscale 'bodily dissociation'.

Touch, subscale of the *Body Investment Scale* (Orbach & Mikulincer, 1998; Dutch version by van der Maas, unpublished), comprises 6 items also on a 5-points Likert-type scale, and measures the experience of touch and proximity. Higher scores indicate more positive experiences. Psychometric evaluation for the Dutch version is presently underway.

Statistical Analysis

All analyses were performed using SPSS Version 17.0 (SPSS, Inc., Chicago, IL). Both intention-to-treat (ITT) and completer analyses were conducted. For ITT analyses, patients without a post-intervention assessment were considered to have no difference between pre- and post-intervention assessment scores. Therefore, baseline scores were assigned to these

patients as their post-intervention scores, so that no change was assumed to have occurred. For the completers analysis, only patients with both a pre- and post-intervention assessment were included.

To analyse differences between the pre- and post-intervention, paired samples *t*-tests were performed. All statistical tests were conducted using a two-tailed alpha level of 5%.

Series of multiple hierarchical regressions analyses were performed to investigate potential covariates. Some paired samples *t* tests were performed to analyze differences between pre- and post-intervention, using the stepwise Bonferroni procedure to adjust for multiple comparisons.

Effect size. As a measure of change, uncontrolled effect sizes were calculated using Cohen's *d* statistic (difference between scores before and after the intervention divided by the pooled standard deviation). This means that effect sizes (*ES*) are not compared to a placebo or control group. *ES* above 0.2 are considered as 'small', above 0.5 as 'medium' and above 0.8 as 'large' (Cohen, 1988).

Clinical significance. Jacobson's clinical significance analysis (Jacobson, Follette & Revenstorf, 1984; Jacobson & Revenstorf, 1988; Jacobson & Truax, 1991; Jacobson, Roberts, Berns, & McGlinchey, 1999) provides information about the effects of therapy for the individual patient.

For this purpose a reliable change index (RCI) and a normal cut-off criterion ('c') were calculated to establish significant change and recovery (Table 1). The RCI is calculated to determine if a person's score on the primary dependent variable, the SCL90, is changed sufficiently for it to be unlikely due to chance. To calculate the cut-off point between the normal (healthy) population and the dysfunctional population, criterion 'c' was used. According to Jacobson and Truax (1991), 'c' is used in case norms of the functional population are available and the dysfunctional population show overlap. The scores of the normal population were based on the study of Arindell and Ettema (1986). Clinical significance analyses were carried out only on those who had pre-intervention scores on the SCL90 above the cut-off criterion, because it is otherwise impossible to be defined as recovered in Jacobson's sense, and very difficult to show reliable improvement if scores are already in the functional range.

Chi-square calculations were performed to examine whether reliable improvement rates differed across gender.

Table 1: Data from this study used to assess RCI and cut-off criterion (SCL90)

symbol	definition
M_0	Mean score of normal population
M_1	Mean score at pre-treatment
M_2	Mean score at post-treatment
S_0	Standard deviation for normal population
S_1	Standard deviation at pre-treatment
R	Test-retest reliability
Z	Z-score 95% confidence interval

Results

General characteristics of the patients

Table 2 shows the descriptive statistics of the sample. Three-quarter was female, and the mean age was 43.3 years of age. The majority (34.2%) lived with partner and children and more than half had higher education. A little less than 70% had a job, while a quarter (25.3%) was at sick leave.

Of the 257 patients who started haptotherapy, 164 (64%) had post-intervention scores. Of the 93 patients without post-intervention scores (drop-outs), 54 patients were in therapy with 9 therapists who returned no post-intervention questionnaires at all. Characteristics of the drop-outs and the completers did not differ significantly.

Table 2: Patient characteristics

Characteristics	Pre-test all patients (N=257)	Pre-test Completers (N=165)	Pre-test Dropouts (N=92)
Age (range, m, sd)	19-82, 43.3, 11.8	19-82, 44.7, 12.0	19-62, 40.8, 11.1
• Young (18-31) (%)	16.3	13.9	20.7
• Middle age (31-50) (%)	54.1	53.3	55.4
• Older (50>) (%)	28.0	31.5	21.7
Female (%)	74.3	77.0	69.6
Living situation (%)			
• Alone	24.9	23.6	27.2
• With partner	30.7	32.1	28.3
• With partner and children	34.2	35.2	32.6
• Other	9.4	7.9	12
Education (%)			
• High school	17.2	15.1	20.6
• Primary professional education	26.8	26.6	27.2
• Higher education	52.5	54.6	48.9
• other	2.7	2.4	3.3
Work (%)			
• paid job/payroll	68.5	70.9	64.1
• self-employed	11.3	10.3	13.0
• unemployed	5.8	4.8	7.6
• house-hold	7.0	7.3	6.5
• study	6.2	4.8	8.7
Sick leave (%)	25.3	24.2	27.2

Drop-outs scored significantly higher on the depression subscale of the SCL90, $M=39.5$ ($sd=14.4$) versus $M=35.5$ ($sd=11.4$) for the completers, $t=2.3$, $p<.05$.

Completers who were on sick leave ($n=40$) showed higher pre-intervention scores on the total score of the SCL90 than those who were not, but the difference just failed to be significant ($p=.057$), $M=185.9$ ($sd=47.9$) versus $M=169.1$ ($sd=46.2$), $t=1.9$.

Patients' scores on the SCL90 were compared with norm scores of the clinical population (Arindell & Ettema, 1986). More than half (53.9%) of the sample of this study scored within the category 'medium' on the SCL90 total score, as well as on the SCL90 subscales anxiety (61.1%) and depression (48.8%).

Correlations among dependent measures

Correlations among the dependent measures at pre-intervention are shown in table 3 and 4. Table 3 shows the correlations between the three subscales of the primary dependent variable, SCL90. Correlations are in the moderate to high range with the highest being between the subscales 'anxiety' and 'depression' at $r=.74$, thus sharing 55% variance. The variances are not indicating redundancy among any of the measures.

Table 3: Correlations between SCL subscales at pre-intervention

Variable	SCL90 depression	SCL90 somatic complaints
SCL90 anxiety	0.74 *	0.66*
SCL90 depression		0.64*

* $p<0.01$

Table 4 shows the correlations between the other dependent variables. Correlations vary between low and moderate, with the highest between BIPM 'insight' and SBC tot at $r = .60$, thus sharing 36% variance. Correlations between the secondary dependent measures and the primary dependent variable, SCL90 total score, were all in the lower range with the highest between SCL90 and BIPM 'insight' at $r = .31$, sharing 10% variance. This also indicates no redundancy between the SCL90 and the secondary dependent measures.

Table 4: Correlations between secondary outcome measures at pre-intervention

	BIPM ins	BIPM int	ACS sc	ACS sfo	ACS amns	SBC tot	TOUCH tot
SCL90 tot	-.31**	.07	.05	-.18**	-.17**	-.22**	-.08
BIPM ins		-.17**	-.15*	.15*	.13*	.60**	.20**
BIPM int			.15*	.01	-.02	-.37**	-.12
ACS sc				.18**	.24**	-.11	-.10
ACS sfo					.24**	.06	-.09
ACS amns						.00	.03
SBC tot							.34**

Note: SCL90 tot = Symptom Check List 90 total score; BIPM ins = Balance Index of Psychological Mindedness subscale insight; BIPM int = Balance Index of Psychological Mindedness subscale interest; ACS sc = Autonomy Connectedness Scale subscale self-consciousness; ACS sfo = Autonomy Connectedness Scale subscale sensitivity for others; ACS amns = Autonomy Connectedness Scale subscale ability to manage new situations; SBC tot = Scale of Body Connection totalscore; TOUCH tot = touch total score. * $p<.05$, ** $p<.01$

Potential covariates

To determine whether baseline characteristics predicted changes on any of the dependent variables, series of multiple hierarchical regressions analyses were performed. The post-intervention score of each of the dependent variables was regressed on the pre-intervention score, and then on each of the potential covariates. Of 66 analyses (six potential covariates and eleven dependent measures), only two were significant at $p < .05$. Changes in scores on the BIPM 'insight' were associated with living situation ($p = .02$). Living with parents or with children only showed more improvement. Scores on the BIPM 'interest' were associated with gender ($p = .01$). The decrease of interest in one's internal psychological phenomena was bigger for women than for men.

Treatment effects

Tables 5 and 6 display the analyses for both intention-to-treat and the completers and indicate no significant difference between pre- and post-intervention on the ACS subscale self-consciousness ($p = .29$) and the ACS subscale ability to manage new situations ($p = .34$). There are significant differences between pre- and post-intervention for all other dependent measures, using stepwise-Bonferroni corrections for multiple comparisons.

Table 5: Means (and SDs) at Pre-intervention and Post-intervention for Intention-to-treat analyses

Variables	N	Pre-intervention	Post-intervention	Pre vs. post		
				t	p	ES
SCL90 tot	256	178.00 (50.99)	156.73 (53.00)	54.14	0.00	0.41
SCL90 anx	257	20.61 (7.69)	17.74 (7.29)	8.89	0.00	0.38
SCL90 dep	256	39.91 (12.65)	31.93 (13.46)	8.93	0.00	0.61
SCL90 som	256	24.31 (8.11)	21.17 (7.88)	9.18	0.00	0.39
BIPM ins	257	15.86 (6.80)	19.05 (6.21)	8.46	0.00	0.49
BIPM int	256	9.28 (6.09)	8.28 (6.07)	3.82	0.00	0.16
ACS sc	253	20.33 (2.07)	20.17 (2.79)	1.06	0.29	0.07
ACS sfo	252	50.62 (4.80)	51.27 (4.89)	2.72	0.00	0.15
ACS amns	253	17.68 (2.60)	17.80 (2.78)	0.95	0.34	0.05
SBC tot	257	64.94 (9.41)	68.77 (9.75)	8.22	0.00	0.40
Touch tot	254	21.06 (4.53)	21.94 (4.38)	4.99	0.00	0.20

Note: SCL90 tot = Symptom Check List 90 total score; SCL90 anx = Symptom Check List 90 subscale anxiety; SCL90 dep = Symptom Check List 90 subscale depression; SCL90 som = Symptom Check List 90 subscale somatic complaints; BIPM ins = Balance Index of Psychological Mindedness subscale insight; BIPM int = Balance Index of Psychological Mindedness subscale interest; ACS sc = Autonomy Connectedness Scale subscale self-consciousness; ACS sfo = Autonomy Connectedness Scale subscale sensitivity for others; AGS amns = Autonomy Connectedness Scale subscale ability to manage new situations; SBC tot = Scale of Body Connection totalscore; TOUCH tot = touch totalscore.

Analyzing the primary outcome measures of the intention-to-treat analyses, i.e. SCL90 total score and the SCL90 subscales 'depression', 'anxiety' and 'somatic complaints', the largest effect size was for the subscale 'depression', $ES = .61$, indicating medium change. Other effect sizes ranged from .38 to .41, which is in the range of small changes. With the exception of the ACS 'self-consciousness' and the ACS 'ability to manage new situations' all the secondary outcome measures were significant and indicated small effect sizes. All

changes are in the expected direction, with the exception of the BIPM int (interest in one's internal psychological phenomena) subscale, which showed a significant deterioration.

Table 6: Means (and SDs) at Pre-intervention and Post-intervention for Completer analyses

Variable	N	Pre-intervention	Post-intervention	Pre vs. post		
				t	p	ES
SCL90 tot	164	173.75 (46.99)	140.09(42.72)	11.41	0.00	0.75
SCL90 anx	163	20.06 (7.36)	15.44(5.64)	10.01	0.00	0.71
SCL90 dep	162	35.49(11.50)	27.61(10.95)	9.86	0.00	0.70
SCL90 som	164	23.62(7.62)	18.73(6.07)	10.16	0.00	0.71
BIPM ins	164	15.99 (6.12)	21.00(5.48)	9.21	0.00	0.77
BIPM int	164	9.04(6.12)	7.46(5.93)	3.88	0.00	0.26
ACS sc	153	20.35(2.59)	20.09(2.74)	1.06	0.29	0.10
ACS sfo	153	50.72(4.64)	51.73(4.69)	2.54	0.00	0.22
ACS amns	153	17.78(2.43)	17.99(2.73)	0.95	0.34	0.08
SBC tot	164	65.53(9.44)	71.52(8.91)	8.87	0.00	0.65
Touch tot	161	21.03(4.32)	22.41(4.01)	5.13	0.00	0.33

Note: SCL90 tot = Symptom Check List 90 total score; SCL90 anx = Symptom Check List 90 subscale anxiety; SCL90 dep = Symptom Check List 90 subscale depression; SCL90 som = Symptom Check List 90 subscale somatic complaints; BIPM ins = Balance Index of Psychological Mindedness subscale insight; BIPM int = Balance Index of Psychological Mindedness subscale interest; ACS sc = Autonomy Connectedness Scale subscale self-consciousness; ACS sfo = Autonomy Connectedness Scale subscale sensitivity for others; ACS amns = Autonomy Connectedness Scale subscale ability to manage new situations; SBC tot = Scale of Body Connection total score; TOUCH tot = touch total score.

Changes in primary outcome measures in the completer analyses were more robust than in the intention-to-treat analyses. All effects were in the medium range.

For the secondary outcome measures, changes were comparable with the intention-to-treat analyses. All effect sizes were small, with the exception of BIPM 'insight', which showed a medium effect.

Analysis of clinical significance

To determine whether a person was improved on the SCL90 total score, the reliable change index (RCI) and the cut-off criterion 'c' were calculated. The following formula by Jacobson and Truax (1991) was used to calculate the RCI, using data from this study (Table 7) and scores of the normal population based on the test results of Arrindell and Ettema (1986).

Table 7: Data from this study used to assess RCI and cut-off criterion (SCL90)

symbol	definition	men	women
M_0	Mean score of normal population*	117.2	128.9
M_1	Mean score at pre-treatment	167.11	175.13
M_2	Mean score at post-treatment	135.11	140.63
S_0	Standard deviation for normal population*	27.3	36.4
S_1	Standard deviation at pre-treatment	44.28	47.62
r	Test-retest reliability	.96	.96
Z	Z-score 95% confidence interval	1.96	1.96

* Arrindell and Ettema (1986)

$$RCI = Z * S_{diff}$$

$$S_{diff} = \sqrt{2 * (SE)^2}$$

$$SE = S_1 * \sqrt{1-r}$$

$$\text{Men: } SE = 44.28 * \sqrt{1-.96} = 8.86$$

$$\text{Women: } SE = 47.62 * \sqrt{1-.96} = 9.52$$

$$\text{Men: } S_{diff} = \sqrt{2 * (8.856)^2} = 12.52$$

$$\text{Women: } S_{diff} = \sqrt{2 * (9.524)^2} = 13.47$$

$$\text{Men: } RCI = 1.96 * 12.52 = 24.54 \approx 25$$

$$\text{Women: } RCI = 1.96 * 13.47 = 26.40 \approx 26$$

A decrease of 25 points or more for men and 26 points or more for women was needed for them to be classified as improved. simple communication, an improvement of 25 points for both men and women is used.

To calculate the cut-off point for both men and women between the functional and dysfunctional population, the mean scores on the SCL90 for the normal population were used. The formula by Jacobson and Truax (1991) calculates the cut-off criterion 'c':

$$C = ((S_0 * M_1) + (S_1 * M_0)) / (S_0 + S_1)$$

$$\text{Men: } C = ((27.3 * 167.11) + (44.28 * 117.2)) / (27.3 + 44.28) = 136.24$$

$$\text{Women: } C = ((36.4 * 175.13) + (47.62 * 128.9)) / (36.4 + 47.62) = 148.93$$

Men are classified as recovered by a post-intervention score of 136 or lower *and* have improved 25 points or more, they are classified as 'recovered'. Women are classified as recovered by a post-intervention score of 148 or lower, considering that they also have improved at least 25 points.

Table 8 shows numbers and percentages improvement and recovery for the completers who had pre-intervention scores above the cut-off criteria.

Table 8: Numbers (and percentages) of patients who improved, recovered or did not improve

	Improved n(%)	Recovered n(%)	Not improved/ Deteriorated n(%)
female (n=86)	65(75.6)	48(55.8)	21(24.4)
male (n=25)	19(76.0)	14(56.0)	6 (24.0)
all (n=111)	84(75.7)	62(55.9)	27(24.3)

Of the 111 patients with dysfunctional pre-intervention scores (i.e., above the cut-off criteria) who also presented post-intervention scores, about three-quarters showed a reliable improvement, of whom also three-quarters (n=62, 73.8%) crossed the line of recovery, giving

an overall recovery rate of 55.9% (62 of 111). Of the 86 female patients with a pre-intervention score >148, a reliable change was observed in 65 (75.6%) patients of whom 48 (55.8%) had recovered. Of the 25 male patients with a pre-intervention score of >136, a reliable change was observed in 19 patients (76.0%) of whom 14 (56.0%) had recovered.

We further analysed how rates of improvement/recovery differed by severity of pre-intervention scores that were classified according to norms for outpatients (Arrindell & Ettema, 1986). Table 9 shows numbers and percentages for these classifications.

Table 9: Clinically significant change by Start score on the SCL90 total score (based on norms¹ for outpatients in mental health care) for all completers (n=162)

Range of Start score	N (% of sample)	Reliably Improved* (%)	Recovered (%)	Not reliably improved or reliably deteriorated (%)
(very) high (>230)	16(9.8)	14(87.5)	3(18.8)	2(12.5)
above average (173-230)	59(36.0)	47(79.7)	36(61.0)	12(20.3)
average (157-172)	21(12.8)	12(57.1)	12(57.1)	9(42.9)
below average (131-156)	33(20.1)	18(54.5)	11(33.3)**	15(45.5)
(very) low (<131)(%)	33(20.1)	5(15.2)	--	28(84.8)

1 Kloens (2005) * Includes recovered **Only for patients above the cut-off at preintervention (men > 136, women > 148)

Table 9 shows how clinically significant change varied according to starting scores. The proportion improving rises consistently with higher starting scores. Note, however, that the proportion recovering does not show the same consistent trend, presumably because the criterion for recovery requires larger and larger change scores to reach 'normal range'. In this sample, the maximum chance of recovery was for patients with pre-intervention scores in the above average range (173-230).

Chi-square calculations were performed to examine whether reliable improvement rates differed across gender. There was no significant difference between men and women ($\chi^2 = 1.38, p=.24$).

Tables 10 and 11 display the statistical *group* analyses for the intention-to-treat and the completers who scored above the cut-off criteria. With the exception of the ACS subscale 'self-consciousness' ($p = .29$) and the ACS subscale 'ability to manage new situations' ($p = .04$), all other scales showed significant changes using the stepwise Bonferroni procedure for multiple comparisons, both for the ITT as well as for the completers analyses.

Table 10: Mean (and SD) Values at Pre-intervention and Post-intervention for Intention-to-treat above cut-off criterion

Variable	N	Pre-intervention	Post-intervention	Pre vs. post		
				t	P	ES
SCL90 tot	183	199.58(43.92)	171.99(54.11)	10.20	0.00	0.56
SCL90 anx	183	23.28(7.37)	19.54(7.57)	8.97	0.00	0.50
SCL90 dep	183	41.94(11.18)	35.45(13.69)	9.38	0.00	0.52
SCL90 som	183	27.03(7.74)	23.11(8.17)	9.02	0.00	0.49
BIPM ins	183	14.91(6.50)	18.37(6.10)	8.21	0.00	0.55
BIPM int	183	9.89(6.02)	8.91(6.10)	3.23	0.00	0.16
ACS sc	180	20.43(2.63)	20.22(2.64)	1.20	0.23	0.08
ACS sfo	180	50.06(4.36)	50.79(4.65)	2.66	0.01	0.16
ACS amns	180	17.48(2.51)	17.77(2.59)	2.05	0.04	0.11
SBC tot	183	63.32(8.65)	67.56(9.37)	7.99	0.00	0.47
Touch tot	180	20.98(4.33)	21.84(4.39)	3.98	0.00	0.20

Note: SCL90 tot = Symptom Check List 90 total score; SCL90 anx = Symptom Check List 90 subscale anxiety; SCL90 dep = Symptom Check List 90 subscale depression; SCL90 som = Symptom Check List 90 subscale somatic complaints; BIPM ins = Balance Index of Psychological Mindedness subscale insight; BIPM int = Balance Index of Psychological Mindedness subscale interest; ACS sc = Autonomy Connectedness Scale subscale self-consciousness; ACS sfo = Autonomy Connectedness Scale subscale sensitivity for others; AGS amns = Autonomy Connectedness Scale subscale ability to manage new situations; SBC tot = Scale of Body Connection total score; TOUCH tot = touch total score.

Table 11: Mean (and SD) Values at Pre-intervention and Post-intervention for Completers above cut-off criterion

Variable	N	Pre-intervention	Post-intervention	Pre vs. post		
				t	P	ES
SCL90 tot	113	195.50(39.96)	150.16(45.34)	12.89	0.00	1.06
SCL90 anx	113	22.96(6.93)	16.76(5.92)	10.83	0.00	0.96
SCL90 dep	111	40.39(10.21)	29.68(11.33)	11.29	0.00	0.99
SCL90 som	113	26.21(7.42)	19.86(6.33)	10.59	0.00	0.92
BIPM ins	113	14.67(6.93)	20.27(5.52)	9.34	0.00	0.90
BIPM int	113	9.73(5.91)	8.13(5.90)	3.28	0.00	0.27
ACS sc	105	20.49(2.70)	20.11(2.70)	1.20	0.23	0.14
ACS sfo	105	49.95(3.95)	51.22(4.44)	2.69	0.01	0.30
ACS amns	105	17.46(2.39)	17.95(2.52)	2.06	0.04	0.20
SBC tot	113	63.83(8.59)	70.69(8.35)	9.02	0.00	0.81
Touch tot	110	21.02(4.03)	22.44(4.03)	4.09	0.00	0.35

Note: SCL90 tot = Symptom Check List 90 total score; SCL90 anx = Symptom Check List 90 subscale anxiety; SCL90 dep = Symptom Check List 90 subscale depression; SCL90 som = Symptom Check List 90 subscale somatic complaints; BIPM ins = Balance Index of Psychological Mindedness subscale insight; BIPM int = Balance Index of Psychological Mindedness subscale interest; ACS sc = Autonomy Connectedness Scale subscale self-consciousness; ACS sfo = Autonomy Connectedness Scale subscale sensitivity for others; AGS amns = Autonomy Connectedness Scale subscale ability to manage new situations; SBC tot = Scale of Body Connection total score; TOUCH tot = touch total score.

In the ITT analyses, medium effect sizes were found for the SCL90 total score, SCL90 subscale anxiety, SCL90 subscale depression and BIPM insight. All other dependent measures show small or no effects.

The completers above the cut-off criterion showed overall higher effect sizes on the dependent measures. Large effects were found for the SCL90 total score, SCL90 subscales anxiety, depression and somatic complaints, LBW total score and BIPM subscale interest. Only AGS subscale self-consciousness showed no effect.

Discussion

This study investigated the effects of haptotherapy in routine first line practices. In this study 257 patients participate, with a mean age of 43.3 years. The majority was female, while 25.3% was at sick leave. More than half had higher education and 68.5% had paid jobs. The results suggest that haptotherapy has at least a small to medium effect on the psychological and somatic complaints of the patients.

According to the intention-to-treat (ITT) analyses, this study showed significant medium changes in depression and small changes on the other primary outcome measures. The effect sizes of the completers on the Symptom Checklist were all in the medium range. On the secondary outcome measures, small to medium changes were found. Of all secondary outcome measures, insight in one's internal psychological phenomena showed the largest change.

With regard to the secondary measures, patients showed an unexpected decrease of interest in their internal psychological phenomena after treatment. This decrease in interest is difficult to explain. A possible explanation is that as the patients learn more about their body, the interest will decrease overtime as they accept their internal psychological body. For the subscales of 'autonomy-connectedness', there were no significant differences between pre- and post-intervention on the ability to manage new situations and self-consciousness. Although sensitivity for others showed a significant improvement, the effect size was small. While haptotherapy is intended to have a positive effect on these aspects of functioning, it must be concluded that this is not shown in the results.

The more robust effect sizes of completers, in comparison with ITT, may not be surprising because in the ITT the post-intervention scores of the drop-outs were equal to their pre-intervention score. Lower effect sizes will be the consequence of the high drop-out percentage (36%). While this suggests that patients did leave treatment, a number of therapists failed to return any post-intervention questionnaires for reasons unknown. Factual drop-out rate is therefore thought to be lower than the reported 36%. The effect sizes found in the present study were small to medium. Other studies on the effect of psychological therapies in routine practices generally found medium effect sizes (Westbrook & Kirk, 2004; Wiersma, Greeven, Berretty, Krijn & Emmelkamp, 2008). This is in correspondence with the present study.

Besides the positive small to medium effect sizes that have been found, we also analyzed individual change. More than three-quarter of the completers showed a change larger than can be expected by chance; they were defined as improved. The overall recovery rate was more than half. The results for men and women were in correspondence with these overall

findings, although it must be stressed that the number of men in this study was small. Of course, recovery rates for patients who already score below the cut-off criteria at pre-intervention are by definition impossible. The results of treatment may depend upon the severity of the patients' complaints. This may be due to regression to the mean or floor effects, as well as clinical factors such as motivation. Improvement rates of patients with more severe complaints are usually greater than patients with less severe complaints at the start of treatment (Speer, 1992, 1994). This is partially visible in the data of this study. For example, change scores from pre-intervention to post-intervention correlated highly with pre-intervention scores for the SCL90 (men: $r = .70$, $p < .001$; women: $r = .48$, $p < .001$).

This study had a number of limitations that have to be taken into account when interpreting the results. First, research in clinical practice has, in contrast with tightly controlled research, limitations in relation to internal validity. These limitations include uncertainties about the exact protocol of the therapy. The haptotherapists performed their therapy 'as usual' and did not follow a research protocol. Differences in practices may be due to different educations of the therapists and the years of experience working as a haptotherapist. It is also unknown whether the patients had some other treatments besides haptotherapy, i.e. medication or psychotherapy. A major limitation is that the number of sessions and main complaints are unknown. Some patients may have returned postintervention scores after only a few sessions while others may have followed a more intense treatment path. Furthermore, knowledge with regard to major complaints may result in more detailed conclusions with regard to who benefit from haptotherapy the most and those who do not.

Another limitation was that this study lacked comparison with other conditions. We are therefore unable to draw conclusions with regard to spontaneous recovery or the relative effectiveness compared to other types of treatment. We are also unknown with regard to the lasting effects of haptotherapy after the postintervention measurement.

Although a more tightly controlled design is mostly preferred, research in routine practices has the advantage of greater external validity or generalizability, as it is closely related to daily practice (Wakker, 2009).

The choice of secondary measures in the present study was based on the hypothesized more specific effects of haptotherapy, i.e. more specific than the more general reduction of psychosocial and somatic complaints. While it was not easy to select instruments that were closely related to those specific effects, a choice was made nevertheless. Because of the generally weak results on the secondary outcome measures, the choice of the instruments should be reconsidered, or otherwise it must be concluded that haptotherapy does not have

the hypothesized impact on the domains that were measured.

In correspondence with the only other unpublished study that investigated psychophysical complaints (Klabbers, 2010), the present study supports the effectiveness of haptotherapy in a convenience sample of patients in routine practices within the limits of an uncontrolled design.

Literature

- Arrindell, W.A. & Ettema, J.H.M. (1986). *SCL90 Handleiding bij een multidimensionele psychopathologie-indicator*. Lisse: Swets Test Services.
- Bekker, M.H.J., & van Assen, A.L.M. (2006). A short form of the autonomy scale: Properties of the Autonomy-Connectedness Scale (ACS-30). *Journal of Personality Assessment*, *86*, 51-60.
- Berg, M. van den, Visser, A., Schoolmeesters, A., Edelman, P. & van den Borne, B. (2006). Evaluation of haptotherapy for patients with cancer treated with chemotherapy at a day clinic. *Patient Education and Counseling*, *60*(3, Special Issue), 336-343.
- Boot, B. (2004). *Een kwestie van gevoel*. Utrecht: Archipel.
- Cohen, J. (1988). *Statistical power analyses for the behavioral sciences (2nd ed.)*. Hillsdale: Erlbaum.
- De Frangh, A. (2009). *Definiëring en empirische toetsing van de eigenheid van Haptotherapie als lichaamsgerichte therapievorm*. Research Internship, unpublished.
- Derogatis, L.R. (1977). *SCL-90-R, administration, scoring & procedures manual-I for the R(evised) version*. Baltimore: John Hopkins University School of Medicine.
- Jacobson, N.S., Follette, W.C. & Revenstorf, D. (1984). Psychotherapy outcome research: methods for reporting variability and evaluating clinical significance. *Behavior Therapy*, *15*, 336-352.
- Jacobson, N.S. & Revenstorf, D. (1988). Statistics for assessing the clinical significance of psychotherapy techniques: issues, problems, and new developments. *Behavioral Assessment*, *10*, 133-145.
- Jacobson, N.S., Roberts, L.J., Berns, S.B. & McGlinchey, J.B. (1999). Methods for determining the clinical significance of treatment effects: description, application, and alternatives. *Journal of Consulting and Clinical Psychology*, *67*, 300-307.
- Jacobson, N.S. & Truax, P. (1991). Clinical significance: A statistical approach to defining meaningful change in psychotherapy research. *Journal of Consulting and Clinical Psychology*, *59*, 12-19.
- Klabbers, G. (2010). *4DKL onderzoek haptotherapie*. Report. Uitgeverij Haptotherapie Nederland.

- Nyklíček, I. & Denollet, J. (2009). Development and evaluation of the Balanced Index of Psychological Mindedness (BIPM). *Psychological Assessment, 21*, 32-44.
- Orbach, I. & Mikulincer, M. (1998). The Body Investment Scale: Construction and validation of a body experience scale. *Psychological Assessment, 10*, 415-425.
- Plooi, E. (2005). *Haptotherapie, praktijk en theorie*. Amsterdam: Harcourt Assessment.
- Pollman-Wardenier, W. (1998). *Verkenningen in de haptonomie, tastzin, emotie, therapeutische begeleiding*. Utrecht: Bruna.
- Price, C.J. & Thompson, E. (2007). Measuring dimensions of body connection: Body awareness and bodily dissociation. *The Journal of Alternative and Complementary Medicine, 13*, 943-953.
- Speer, D.C. (1992). Clinical significant change: Jacobson & Truax (1991) revisited. *Journal of Consulting and Clinical Psychology, 60*, 402-408.
- Speer, D.C. (1994). Can treatment research inform decision makers? Nonexperimental method issues and examples among older outpatients. *Journal of Consulting and Clinical Psychology, 62*, 560-568.
- Van der Maas, L. *Vragenlijst lichaamsbewustzijn en touch (Questionnaire Body Consciousness and Touch)*. Private Report.
- Veldman, F. (2007). *Levenslust en Levenskunst - Zin, inhoud en betekenisverlening aan het persoonlijke leven binnen de menselijke samenleving*. Blaricum: Van der Veer Media.
- Wakker, J. (2009). *The clinical effectiveness of breathing and relaxation therapy: Results in routine practice* (Master thesis). Amsterdam: VU University, Faculty of Human Movement Sciences.
- Westbrook, D. & Kirk, J. (2004). The clinical effectiveness of cognitive behaviour therapy: outcome for a large sample of adults treated in routine practice. *Behaviour Research and Therapy, 43*, 1243-1261.
- Wiersma, J., Greeven, A., Berretty, E., Krijn, M. & Emmelkamp, P. (2008). De effectiviteit van Virtual Reality Exposure Therapy voor hoogtevrees in de klinische praktijk. *Gedragstherapie, 41*, 253-259.