Water As An Affective Medium

Eleonore ten Thij, Moniek van Slagmaat, Truus Scharstuhl

ABSTRACT

Introduction: Clinical observations suggest that haptotherapy in water improves clients' capacity to experience positive affect. Water is considered an affective affordance (Fuchs 2013); it is used to facilitate bodily awareness, and thus enhances awareness of embodied affectivity. As a result, touch can be used more subtly and sparingly in therapy, which may be beneficial for clients who have difficulties experiencing safety in closeness and with affective touch. The current study constructs and explores a method to make these observations researchable.

Methods: We hypothesized that improving sensory awareness will lead to experiencing more positive affect. We constructed a questionnaire to link base embodiment and field of affective resonance to experiencing specific affects such as vitality and existential feelings. Forty students of the STH Water completed this questionnaire before and after a learning event.

Results: The results indicate that the questionnaire was highly reliable, and that sensory awareness and positive affect had improved.

Discussion: The approach seems feasible for a subsequent research step using the questionnaire with different subjects, testing the model underlying the questionnaire, comparing the effects of haptotherapy in water with the effects of other haptotherapeutic interventions, and adding a therapy effect measurement.

Appendix: questionnaire (QWAM-22).

Keywords: sensory awareness, affect, haptotherapy in water

Submitted: 10.12.2022 Accepted: 07.01.2024

International Body Psychotherapy Journal The Art and Science of Somatic Praxis

Volume 23, Number 1, 2024, pp. 146-164

ISSN 2169-4745 Printing, ISSN 2168-1279 Online

© Author and USABP/EABP.

Reprints and permissions: secretariat@eabp.org

Water facilitates bodily awareness and thus enhances awareness of embodied affectivity.

n the Netherlands, a new therapeutic concept emerged in the 1950s: haptonomy. Theoretically, it was based on the work of Merleau-Ponty, Buytendijk, Prick, Calon, Duynstee, and Terruwe, among others (Verhoeven, 2013). The concept originated from Frans Veldman, who researched the principles of touch and feeling phenomenologically. He developed affective touch to appeal to our bodies-as-subjects (to be discriminated from our bodies-as-objects). He considered our tactile sense as closely connected to our capacity to feel and connect – to experience affect and share emotions (International Journal of Haptonomy and Haptotherapy (IJHH), (WIH), website July 2021).

Haptonomy developed into a specific form of body and touch or contact-oriented therapy, called haptotherapy. It is based on the idea that developing awareness of bodily experienced affects, connectedness, attachment, and autonomy allows for change, growth, and an increase of feelings of wellbeing (Klabbers, 2018, 2022; Wibbels-Pancras, 2021). Its tools are conversation, affective touch, and experiential exercises as means to appeal to a client's embodied, affective abilities.

In the context of haptotherapy, affective touch is a way of touching during which the therapist expresses the intention to acknowledge, accept, and appreciate clients and their affects. Thus, clients are invited to acknowledge and experience affects in their body in a constructive manner. Touch may be used to improve awareness of how clients relate to others. It may help change patterns of responding to fear or stress, and, as a resource for furthering bodily awareness and connection, help improve resilience (Elbers, 2021).

A promising new approach within haptotherapy is haptotherapy in water. Water facilitates bodily awareness and thus enhances awareness of embodied affectivity. As a result, touch can be used more subtly and sparingly. This may be especially beneficial for clients with control issues, trauma, and attachment problems, who have difficulty experiencing safety in closeness and affective touch. Haptotherapy in water may help trigger and heal early childhood trauma. Being carried by, and in, warm water may invoke and address perinatal bodily memories.

There is currently extensive interest in embodiment and affective touch within the fields of phenomenology, empirical research, and therapeutic work. Our body provides us with a sense of self, other, and reality (Fuchs, 2013; Rathcliffe, 2012; Fugali, 2016; Körner, Topalinski, & Strack, 2015; Bekrater-Bodmann, Azevedo, Ainley, & Tsakiris, 2020). Research shows that interoception codetermines our capacity for homeostasis (Neto, Bicalho, & Bortolazzo, 2021). Touch influences our bonding with others (Ellingsen, 2014), our performance and judgment of social situations, our hormonal balance, sleep, immune response, and experience of pain – in other words, our health and feelings of wellbeing. Additionally, touch can communicate intentions in a basic, direct way (Linden, 2016; McGlone, Wessberg, & Olausson, 2014; Kraus, Huang, & Keltner, 2010; Ackerman, Nocera, & Bargh, 2010, as cited in Linden, 2016). According to Field et al. (2005), touch therapy has been noted to have immediate and long-term effects on the body's biochemistry, including decreased levels of the stress hormone cortisol, and increased levels of the neurotransmitters serotonin and dopamine, which play roles in mood regulation, movement, impulse control, and more.

As the subject of touch and its connection with the limbic and vagal systems became more widely researched, touch also found its way into the treatment of both physical and psychiatric conditions, cancer, psychological trauma, and autism spectrum disorders (Porges, 2009; Geller & Porges, 2014; Ogden, 2006; Gene-Cos et al., 2016; Levine, 2010; Brom et al., 2017; Van der Kolk, 2014; Field et. al, 2005; Krieger et al., 1979; Weze et al., 2007).

Research question

Experimental quantitative research in haptotherapy is still relatively new (IJHH website July 2021), and has yet to be developed for haptotherapy in water. In this study, we aim to take a first step in this direction.

As within other body-oriented therapeutic approaches, awareness of sensory information and affect are considered linked (Price & Hooven, 2018). Enhancing sensory awareness is thus considered one of the basic working mechanisms in body-oriented therapy (Tarsha, Park, & Tortura, 2019). Haptotherapy in water operates from the same assumption, and our research question based on this link asks: Does haptotherapy in water enhance sensory awareness and the experiencing of more positive affect?

To assess our research question, we constructed a questionnaire in which we specified sensory awareness and positive affect. Below we illustrate how we derived this questionnaire from relevant literature and clinical observation.

Constructing the questionnaire affects

The way affects are understood in haptotherapy appears closely related to the work of Fuchs (2013, 2016), who explains that affects are not to be regarded only as inner individual states. Rather, they

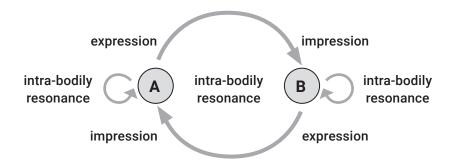


Figure 1: Inter-affectivity

From Phenomenology and the Cognitive Sciences, 11(2), 2012, pp. 205-236, "The Extended Body: A case study in the neurophenomenology of social interaction," by T. Froese and T. Fuchs.

are considered to be primarily shared states that we experience through inter-bodily affection; they are felt from the inside, but also visible in expression and behavior. For example, we feel our vitality in our posture and movement, our anger in our body arousal. The resonance of affects in our bodies – in arousal, posture, and movement – is a simultaneous expression of affect. As such, our affects become externally perceivable and their expression produces an impression, by triggering corresponding or complementary bodily feelings in our interaction partners. Likewise, our interaction partners' affects cause bodily feelings in our bodies, and so on (after Fuchs 2013, also see Figure 1).

Fuchs states:

"We do not live in a merely physical world. The experiential space around us is always charged with affective qualities. We sense an interpersonal climate of atmosphere. Feelings emerge from situations, persons, and objects. Affective space is essentially felt through the medium of the body, which widens, tightens, weakens, trembles, shakes, etc." (Fuchs, 2013)

According to Fuchs, the word affects denotes five different phenomena that differ from each other in qualities like directedness, propositional content, polarity, manner of awareness, duration, and perceived distinctive cause, to name a few:

- Vitality feelings
- 2) Existential feelings
- 3) Affective atmospheres
- 4) Moods
- 5) Emotions

Not only does phenomenology direct our attention to the inherently social character of affects, but experimental neuroscience suggests that mirror neurons are involved in understanding emotions (Motluk, 2008; Rizolatti & Caruana, 2017). Shared representations enable vicarious pain and vicarious touch (Gallese, 2018, 2005; de Vignemont, 2014).

From a body-oriented therapy perspective, positive affect may contribute to our ability to engage in processes of change (Stalikas & Fitzpatrick, 2008; Coombs, Jones, & Coleman, 2002). In our study, we focus on vitality and existential feelings, which seem to be the most basic affects that color the way we experience ourselves in the world, as well as the way we experience the other affects.

Vitality feelings

We consider feelings of vitality as non-intentional – they are not "about" anything. Here we agree with Fuchs (2013) that vitality seems related to fitness and feeling healthy (de Jong-Bouwmeester, 2016). It relates to experiencing internal vital processes - and as such may be both sustained and periodic, but does not entirely coincide. Vitality is also associated with mental attitudes, like lust for life, motivation, and resilience (Strijk et al., 2015; De Jong-Bouwmeester, 2016). We agree with Fuchs (2013) that vitality appears as a continuum between two poles.

We constructed "vitality" partly on Fuchs (2013), and partly on Vita-16 (Strijk et al., 2015), and the Subjective Vitality Scale (Ryan & Frederick, 1997) as found in De Jong-Bouwmeester (2016). These two questionnaires are reasonably well-researched. We thus considered vitality as a concept that can be measured on three dimensions, and added these ten questions to the instrument:

- *Energy:* the extent to which someone is feeling fit, energetic, calm, or tired.
 - I feel fit and energized
 - I feel active and purposeful
 - I am tired
 - I feel calm and relaxed
- Resilience: the degree of pain or discomfort, of feeling able to handle unexpected events well, of feeling that you can take on the world.
 - I suffer from pain or discomfort
 - I feel like I can take on the world
 - I now feel that every experience in life will make me stronger
 - I now feel I can handle unexpected events
- Motivation: the extent of feeling motivated to take on challenges and feeling energized by plans for the future.
 - Next week I will immediately take on a new challenge
 - I get energized by my plans for the future

Existential feelings

The term existential feelings was first used in 2005 by Ratcliffe, who was concerned with making sense of altered experiences of reality in states of depression. He used the concept to name feelings that are not intentional, like emotions or moods; feelings that are somehow related to our felt sense of belonging to the world, to our sense of reality; and affective experiences that constitute how we locate ourselves in the world and with other people. As such, these feelings permeate all our experiences, thoughts, and activities. They are essentially feelings of possibility – what can possibly be felt, and how one can be in the world with oneself and others, etc. (Ratcliffe, 2012). For our purposes. and loosely following Fuchs (2013), we measure existential feelings on the following dimensions, adding nine items to the questionnaire:

- Affectability or affective potential: the degree to which you are capable of experiencing affects and to what extent you feel present, open, and lively
 - I feel present
 - I feel a lot of space (openness, freedom) in myself
 - I feel lively

- Connectedness with self / feeling in harmony with self: the degree to which you have faith in yourself, feel good about yourself and your life
 - I have faith in myself
 - I feel good about myself and my life
- Connectedness with the world (others) / feeling in harmony with others: the degree to which you feel involved and at home with others, or in need of control of your environment and the opinions of others
 - I now feel involved in my environment
 - I feel at home in this company
 - I leave nothing to chance
 - I wonder what others will think of me

Constructing the questionnaire bodily awareness

Field of affective resonance

Water contact can be both a physical and affective means of being in contact with ourselves and with others. Water becomes an affective medium both through the intrinsic qualities of the warm water itself and through explicit guidance.

According to Scharstuhl, specific qualities of water appeal to us:

"Water, especially warm water, can bring us in contact with our bodies: it encloses us like a second skin. The touch of water is so complete that the connection with our tactile senses and our feelings is made instantly. The body softens and becomes receptive. There is also a physiological impact; pleasantly warm water has a subduing effect on the involuntary vegetative nervous system, rendering us calm. The buoyancy of water makes us feel lighter and thus float. The amount of air we have in our lungs strengthens our buoyancy further. The water carries us (and also enables you to be carried by others quite easily). Due to the hydrostatic pressure, water also has a supportive quality. Because of this pressure, which causes the pressure of the water to be equally divided over all parts of our bodies, we feel the water very evenly and uniformly. Water supports and surrounds us and keeps us balanced." (Scharstuhl 2020a: Scharstuhl, van Banning, 2020b)

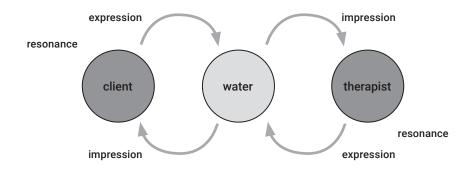


Figure 2: Water as an affective affordance for embodied inter-affectivity

Typically, a haptotherapy session in water starts with specific basic guidance that aims to further two types of sensory awareness: awareness of the field of affective resonance, and base embodiment. It generally includes four steps:

- 1. Direct the client's interoception, and the affects that are conveyed.
- 2. Enhance the client's proprioception and exteroceptive awareness of the qualities of the space surrounding them and the feelings these denote.
- 3. Direct the client's awareness of the inter-affectivity that the qualities of this surrounding space facilitate, and how this contributes to the client's (inner) movements and the meaning they attribute to the interaction. Therapists also activate their field of affective resonance. As a result, clients are also, by means of embodied inter-affectivity, implicitly guided to activate their affective field of resonance (See Figures 1 and 2).
- 4. Help the client get awareness of base embodiment (see below).

Fuchs (2013, 2016) argues that the body serves as the medium of our affective engagement in a given situation. Actions, feelings, and emotions are visible through our bodily expressions. Intercorporality and interaffectivity emerge when the bodies of several individuals are intertwined in a process of bodily resonance.

Similarly, neuroscientific research assumes that mirror neurons help us to experience and understand other people's actions, emotions, and sensations. Innamorati, Gallese, Ebisch, and Saggino (2019) show that vicarious experience – the phenomenon of intersubjective emotion, which consists of participating in the emotion of another through affective responses to the other's emotional state - describes a fundamental quality of empathy and social understanding. Keysers, Kaas, and Gazolla (2010) show that similarly, somatosensory input is probably linked to our visual and auditory social perception.

In haptotherapy, when participating fully and autonomously in this interaffectivity, it is important to discern between sensing and feeling our own actions, sensations, emotions, and those of the people surrounding us. Therefore, we help clients develop an awareness of sensations stemming from their own experiences, and those stemming from others' experiences - their vicarious sensations. Grouped together, we call interoception, exteroception, proprioception, and vicarious sensations the field of affective resonance (FAR). Originally the technical term 'transsensus' was used in haptotherapy meaning the haptic capacity to be perceptively and affectively aware of others in the space around you (Veldman, 2007). We instead use field of affective resonance to align with the terminology borrowed from Fuchs to denote these three modes of sensory awareness, together with the peri-personal space in which people are aware of their mutual vicarious feelings.

The basic guidance aims to raise awareness of water as an affective affordance (Fuchs, 2016, see Figure 2) that furthers a client's FAR.

"They become aware of the warm water enhancing their sense of boundaries. On the one hand, this results in elucidating and intensifying their interoception, more than what they sense in themselves outside the water. They tend to feel more 'collected', more as a whole, or more complete. On the other hand, this results in being more aware of the water that envelops them. They are more aware of their skin, and thus of how they move. The more they are aware of the water space enveloping them, the less they feel hindered by the counter pressure of the water, and the more the hydrostatic pressure allows them to move smoothly; they move 'with' the water, instead of against it." (Scharstuhl, 2020a)

Additionally, the movement of the water contributes to the awareness of how they experience others in their water space. They experience the water physically and inter-affectively embedding them (see Figure 2). As a result, they get a better sense of where other people are in relation to themselves, and how they could attune themselves to others. We assume that this enhanced sense of FAR in water (or aquatic field of affective resonance) will help further the awareness of the FAR outside the water.

With the help of an interview group of experienced haptotherapy in water instructors, we formulated eight items that query FAR.

- *Interoception:* the degree to which you can feel the surrounding space
 - I can sense my skin
 - I feel a little skittish
- Exteroception: the degree to which you are attuned to the physical world outside yourself.
 - I can sense the space around me
- Proprioception: the degree to which you are aware of your position in space
 - I can sense the position of my body in this space
 - (I sense) I have clenched my jaws somewhat
- Vicarious sensations: the degree to which you are attuned to others in your peri-personal space.
 - I can sense where others are around me
 - I can sense how I can tune in to others

Constructing the questionnaire base embodiment

Another point of attention in the basic instruction is invoking a feeling of being well-balanced physically, mentally, and emotionally. This experience of being well-balanced can invoke feelings of being at home with yourself, feeling secure, and being present in the moment.

According to haptotherapists, feeling well-balanced depends on how aware you are of the sub-abdominal and lower back area of your body, specifically the pelvic, iliac and hypogastric regions. We call this base embodiment (Figure 3).

Veldman, the founder of haptonomy, stresses the importance of basic presence for representing authenticity in relating to others. He describes it as expressing the way a person is present with the experience of the authentic fundamentals of one's being in the world.

"Being present in one's basis can be observed in muscle tone that allows for a coordinated, effective and smooth pattern of moving. Feeling complete in one's base corresponds to a person feeling secure, open and aware of herself." (Veldman, Soler, 2013, p. 15)

Since this research tries to differentiate between sensory information and affect - to examine whether they are indeed linked – we use the term

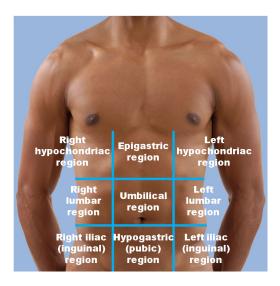


Figure 3: Base embodiment through awareness of pelvic, iliac, and hypogastric regions

base embodiment. We adhere to the technical definition of embodiment based on Niedenthal (2007): the perceptual, somatovisceral, and motoric experiencing of feelings, emotions, and actions.

In the basic guidance, helping clients become aware of how they embody their base consists largely in:

- Directing client awareness to the buoyancy of
- Helping clients balance posture in water in such a way that clients are optimally aware of this area of their body
- Breathwork combined with movement from the lumbar regions

With the help of our interview group, we operationalized the notion of base embodiment by asking what it means to embody one's base. Subsequently, we compared our findings with those found in the literature.

The haptotherapists agreed about seven base embodiment characteristics that could be categorized into three dimensions, with seven questions to add to the questionnaire.

- Support: the degree to which you feels yourself, literally, supported
 - I feel close to myself
 - I can sense the chair / the earth supporting
 - I am firmly standing on my legs
- *Movement:* the degree of moving smoothly, and as a whole
 - I am moving as a whole
 - I am moving smoothly
- Interoception base: the degree of awareness of one's physicality as a subject, and calm breath-
 - I am breathing calmly
 - I can sense my body (physical reactions) clearly

Methods

Participants

In this study, we focus on the effect of the basic sensory awareness and affect guidance. When a client engages in a water haptotherapy session, the therapist usually starts with a specific basic guidance. Mastering basic guidance is an important part of the curriculum a haptotherapist must complete to become competent in counseling in water. Both the first therapy session and the first module in the therapy curriculum are mainly dedicated to this basic guidance. Later sessions and modules generally begin with a shortened version of this guidance. We invited forty-two students from the Scholingscentrum voor Toegepaste Haptonomie in Water (STH Water) / School of Applied Haptonomy in Water to participate in this study. Students were at varying stages of training. Two students turned in incomplete questionnaires, which were excluded from the analysis.

The curriculum of the STH Water consists of six modules. The first module provides an extensive program on the basic guidance. Advanced modules follow human developmental phases of attachment and autonomy, providing some specific process work on these subjects. More extensive learning takes place in therapy sessions, and in applied collaborative learning within a network of therapists. However, the basic guidance is part of every course and learning session.

Sixteen students (40%) came from the first module, eight (20%) from the second, nine (22.5%) from the fifth module, and seven students (17.5%) from the learning network. Most students, 95% (38), were female, the mean age was 57.6 (SD = 6.26), and all had at least a degree in higher vocational education. All students were haptotherapists.

Instruments

We operationalized our key concepts by constructing a 33-item questionnaire consisting of seven-point Likert scales. The items were phrased as propositions. The Likert scales ranged from "I do not agree at all" to "I agree completely." The questionnaire was randomized, avoiding a response bias by placing questions belonging to a specific concept together. The questions were based on literature study wherever possible, and clinical observations, as described above. For clinical observations, we interviewed two very experienced and two beginning haptotherapy-in-water instructors, all of them experienced haptotherapists. For the actual questionnaire, please refer to the appendices.

Procedure

At the beginning of the course / learning session, students were asked to participate in a research study on haptotherapy in water. Students were asked to complete a questionnaire before and after a course / learning session. The researcher was not present during these courses / learning sessions. The questionnaire provided a short explanation stating the objective of the study in general terms, and how to complete the questionnaire. Age and level of education were asked, but not names. Students participated voluntarily, and received no reward for participating

Data Analysis

We used the open source and cross-platform JASP Team (2022) to conduct statistical analysis. Questions containing a negation were recoded before entering the statistical analysis.

For reliability analysis, we used Cronbach's Alpha, McDonald's Omega, and Guttman's Lambda-2. Although Cronbach's Alpha is quite commonly used in research, methodological literature criticizes it as a measure of reliability (Sijtsma, 2009; Crutzen & Peters, 2015; Mcneish, 2017). Therefore, we offer all three scales here.

We then used the paired samples t-test, which compares the mean values of two measurements, to examine the relationships between pre- and post-session values of the variables.

Consecutively, we used Spearman's correlations test to examine coherence within and between the two measurements, or, in other words, the link between awareness of sensory information and affect.

Results

Reliability

As we can see in Table 1, the reliability of the questionnaire was very good.

Hypothesized effect of haptotherapy in water

We hypothesized that the basic instruction of haptotherapy in water increases clients' vitality, positive existential feelings, base embodiment, and field of affective resonance.

To test this hypothesis, we first added up the values of the variables (answers to the questions) of each concept (or subscale) and compared pre- and post-session values:

We then used the paired samples t-test, which compares the mean values of two measurements, to examine the significance of the relationships between pre- and post-session values of the variables.

Table 2 shows the general tendency of the data. Table 3 shows that our tentative hypothesis appears confirmed.

Link between awareness of sensory information and affect

As we can see in Table 4, there is a strong positive, highly significant correlation between:

- Base Embodiment and Existential (rS = 0.77, p < 0.001);
- Base Embodiment-2 and Existential-2 (rS = 0.812, p < 0.001);
- Base Embodiment-2 and FAR-2 (rS = 0.734, p < 0.001).

Table 1. Frequentist Scale Reliability Statistics

Estimate	McDonald's ω	Cronbach's $lpha$	Guttman's λ2
Point estimate	0.912	0.912	0.919
95% CI lower bound	0.873	0.864	0.872
95% CI upper bound	0.952	0.946	0.949

Note: Of the observations, pairwise complete cases were used. CI = confidence interval

Table 2. Descriptives

	N	Mean	SD	SE
Vitality	40	46.025	7.213	1.140
Vitality-2	40	54.200	7.680	1.214
Existential	40	45.375	6.997	1.106
Existential-2	40	54.000	5.542	0.876
Base embodiment	40	35.825	5.602	0.886
Base embodiment-2	40	43.725	3.883	0.614
FAR	40	38.075	4.281	0.677
FAR-2	40	45.175	3.734	0.590

There was a mediocre positive, strongly significant relationship between:

- Existential and Vitality (rS = 0.664, p < 0.001);
- Base Embodiment and Vitality (rS = 0.505, p < 0.001);
- FAR and Existential (rS = 0.587, p < 0.001);
- FAR and Base Embodiment (rS = 0.587, p < 0.001);
- Existential -2 and Vitality -2 (rS = 0.648, p < 0.01);
- Base Embodiment 2 and Vitality-2 (rS = 0.559, p < 0.001);
- FAR-2 and Existential-2 (rS = 586, p < 0.001).

There was a weak positive significant relationship between FAR and Vitality (rS = 0.447, p = 0.004) and between FAR-2 and Vitality-2 (rS=0.315, p=0.048). There are no significant correlations between the pre-and post-session values of the variables; the two measurements are clearly distinguished. This indicates that there indeed might be a relationship between sensing your body and experiencing affect, as is supposed in haptotherapy in water.

Discussion

Our aim with this study was to make the effect of haptotherapy in water researchable; does haptotherapy in water improve the capacity to feel – to expand sensory awareness - and to experience positive affect?

Our approach indeed seems promising. It seems to confirm that sensory awareness is linked to experiencing affect, one of the basic assumptions of haptotherapy and other body psychotherapy approaches, which is already confirmed in previous research (Ciofi, 1991; Kitayama, 1991; Mehling et al., 2009; Price & Hooven 2018; Linzarini et al., 2021). More specifically, it indicates that base embodiment and field of affective resonance are linked to feelings of vitality and positive existential affect. It also suggests that the basic instruction of haptotherapy in water helps ameliorate both affects. This is relevant to both haptotherapists and their clients. The better the haptotherapist's capacity to feel, the better they may help clients become aware of what they feel. If enhanced awareness of sensory information increases positive affect, clients may thus be more able to engage in processes of change (Fitzpatrick & Stalikas, 2008; Coombs, Jones, & Coleman, 2002).

However, it is too early to draw this conclusion, since the sample was too small to test the model contained in the questionnaire. Moreover, the results of this study may have been affected by some bias. Although the basic instruction is part of every course, the courses also differ from each other. We used a sample of convenience, instead of a random one. We constructed a questionnaire to operationalize specific ways of feeling and specific affects. The questionnaire turned out to be highly reliable, in relation to the sample of haptotherapists. Although we did not use specific jargon, haptotherapists are schooled to ask and answer questions about feeling and affect. Future research is necessary to investigate if the questionnaire is also reli-

 Table 3. Paired Samples T-Test: significant differences pre-test and post-session conditions

Measure 1		Measure 2	t	df	р	Mean	SE	Cohen's d
Vitality	-	Vitality-2	-5.213	39	< .001	-8.175	1.568	-0.824
Existential	_	Existential-2	-6.320	39	< .001	-8.625	1.365	-0.999
Base embodiment	_	Base embodiment-2	-7.906	39	< .001	-7.900	0.999	-1.250
FAR	_	FAR-2	-7.189	39	< .001	-7.100	0.988	-1.137

Note: Student's t-test.

Table 4. Spearman's Correlations: link between sensory awareness and affect

Variable		Vitality	Existential	Base embodiment	FAR	Vitality-2	Existential-2	Base embodiment-2	FAR-2
1. Vitality	rS	_							
	p	_							
2. Existential	rS	0.664 ***	_						
	p	< .001	_						
3. Base embodiment	rS	0.505 ***	0.777 ***	_					
	p	< .001	< .001	_					
4. FAR	rS	0.447 **	0.558 ***	0.587 ***	_				
	p	0.004	< .001	< .001	_				
5. Vitality-2	rS	0.038	-5.179e4	-0.010	-0.062	_			
	p	0.818	0.997	0.953	0.703	_			
6. Existential-2	rS	-0.032	0.237	0.134	-0.117	0.648 ***	_		
	p	0.845	0.141	0.410	0.472	< .001	_		
7. Base embodiment-2	rS	0.125	0.288	0.202	-0.217	0.559 ***	0.812 ***	_	
	р	0.443	0.071	0.212	0.178	< .001	< .001	_	
8. FAR-2	rS	0.215	0.243	0.168	-0.120	0.315 *	0.586 ***	0.734 ***	_
	р	0.183	0.130	0.299	0.460	0.048	< .001	< .001	

^{*} p < .05, ** p < .01, *** p < .001; p = p-value, rS = Spearman's ρ

able in random (client) samples. Further research may show whether parts of the questionnaires can be used to guide clients in their awareness of base embodiment and field of affective resonance, and to assess treatment effect. Other body awareness questionnaires seem either too general for our purposes (Shields, Mallory, & Simon, 1989) or not adapted to specific capacities to feel, relevant to haptotherapy and haptotherapy in water (Mehling et al., 2009).

When we look at the outcome of the correlation analysis, the results seem almost perfect. The results may have been partially influenced by a combined recall and expectancy bias. The time between the first and second completion of the questionnaire was about four and a half hours on average. Students may have had some memory of how they had answered some of the questions earlier. However, since the instrument contained 33 questions, we expect this effect to be limited.

Nevertheless, we think we are justified to consider our approach adequate to use in an experimental design that allows us to compare the effects of the basic instruction of haptotherapy in water with the effect of other haptotherapeutic interventions, or of other activities in water. Further research should thus assess a causal relationship between haptotherapy in water, enhanced sensory awareness, and experiencing more positive affect. Also, it should assess whether this form of therapy contributes to a more lasting improvement of the capacity to feel, or the extent to which it brings about positive outcomes in the treatment of specific client groups.



Eleonore ten Thij, MSc, is affiliated with STH Water as an advisor and researcher. She has maintained a private practice since 2011, specializing in trauma treatment, both as a haptotherapist in water and an EMDR therapist. Previously, she was an assistant professor at Utrecht University, and as such, she has presented at international congresses and written several articles about social and educational uses of information technology. As a learning designer, she worked with organizations such as the Dutch Council for Secondary Education, Shell, NS, and TNO.

Zin-tact Haptonomie Phone: +31 625518774 Email: info@zin-tact.nl

Internet: https://zin-tact.nl, https://sthwater.nl



Moniek van Slagmaat, MSc, is co-founder of the STH Water, and concerned with developing the theory and practice of haptotherapy in water. She has a private practice in haptotherapy in water and haptotherapy. Her educational background in physical geography and creative therapy allows her to combine experiential development and therapy with analytical thinking. She has the privilege of having been educated in haptotherapy by some of its founders.

Haptonomie Moniek van Slagmaat

Phone: +31 302716127

Email: info@haptonomievanslagmaat.nl

Internet: https://www.haptonomievanslagmaat.nl, https://sthwater.nl



Truus Scharstuhl, BSc, is the founder of haptotherapy in water, method STH Water. Since 1989, she has combined her knowledge and insights about haptonomy and water therapies (she took several trainings) with clinical experiences with babies and adults in water. She published various articles about haptotherapy in water. Her professional background is in physiotherapy, specializing in psychosomatics, hydrotherapy, and haptotherapy. In the 1970s and 1980s, she was educated in haptotherapy by its founder Frans Veldman and his contemporaries. Since 1995, she has maintained a private practice in haptotherapy and haptotherapy in water.

Haptotherapie Scharstuhl Phone: +31 620970679 Email: sth-water@kpnmail.nl

Internet: https://haptotherapiescharstuhl.nl, https://sthwater.nl

REFERENCES

Bekrater-Bodmann, R., Azevedo, R. T., Ainley, V., & Tsakiris, M. (2020). Interoceptive awareness is negatively related to the exteroceptive manipulation of bodily self-location. Frontiers in Psychology, 11, 562016. https://doi.org/10.3389/fpsyg.2020.562016

Brom, D., Stokar, Y., Lawi, C., Nuriel-Porat, V., Ziv, Y., Lerner, K., & Ross, G. (2017). Somatic Experiencing for posttraumatic stress disorder: A randomized controlled outcome study. Journal of Traumatic Stress, 30, 304-312. 10.1002/jts.22189

Ciofi, D. (1991). Sensory awareness versus sensory impression: Affect and attention interact to produce somatic meaning. Cognition and Emotion, 5(4), 275-294. https://doi.org/10.1080/02699939108411041

Ciompi, L., & Panksepp, J. (2005). Energetic effects of emotions on cognitions—complementary psychobiological and psychosocial findings. In Ralph, D. Ellis, R., & Newton, N. (Eds.) Consciousness and emotion: Agency, conscious choice, and selective perception. Amsterdam-Philadelphia: J. Benjamins Publishing Company: 23-55. https://doi.org/10.1075/ceb.1.04cio

Coombs, M., Coleman, D., & Jones, E. E. (2002). Working with feelings: The importance of emotion in both cognitive-behavioral and interpersonal therapy in the NIMH Treatment of Depression Collaborative Research Program. Psychotherapy: Theory, Research, Practice, Training, 39(3), 233-244. https://doi.org/10.1037/0033-3204.39.3.233

Cromby, J. (2007). Toward a psychology of feeling. International Journal of Critical Psychology, 21, 94-118.

Crutzen, R., & Peters, G. (2015). Scale quality: Alpha is an inadequate estimate and factor-analytic evidence is needed first of all. Health Psychology Review, 11(3), 242-247. 10.1080/17437199.2015.1124240

Damasio, A. R. (1999). The feeling of what happens: Body and emotion in the making of consciousness. New York: Harvest Edition. In Dutch translation: Damasio, A. R. (2009). Ik voel dus ik ben. Hoe gevoel en lichaam ons bewustzijn vormen (5th ed.). Uitgeverij Wereldbibliotheek.

Eichinger, I., Schreier, M., & van Osselaer, S. M. J. (2021). Connecting to place, people, and past: How products make us feel grounded. Journal of Marketing, 85(1), 1-16. https://doi.org/10.1177/00222429211027469

Elbers, E. (2021). Embodied resilience: A phenomenological perspective. Indo-Pacific Journal of Phenomenoloqy, 21(1), 1-8. https://doi.org/10.1080/20797222.2021.1965857

Ellingsen, D. M. (2014). Central modulation of affective touch, pain, and emotions in humans (Thesis). Department of Physiology, Institute of Neuroscience and Physiology, Sahlgrenska Academy at University of Gothenburg.

Field, T., Hernandez-Reif, M., Diego, M., Schanberg, S., and Kuhn, C. (2005). Cortisol decreases and serotonin and dopamine increase following massage therapy. International Journal of Neuroscience, 115(10), 1397-413. 10.1080/00207450590956459

Fuchs, T. (2013). The phenomenology of affectivity. In K. W. M. Fulford, M. Davies, R. G. T. Gipps, G. Graham, J. Z. Sadler, G. Stanghellini, and T. Thornton (Eds.), The Oxford handbook of philosophy and psychiatry. Oxford Handbooks Online. https://doi.org/10.1093/oxfordhb/9780199579563.013.0038

Fuchs, T. (2016). Intercorporeality and interaffectivity. In C. Meyer, J. Streeck, & S. Jordan (Eds.), Intercorporeality: Emerging socialities in interaction. Oxford University Press. https://doi.org/10.1093/acprof:oso/978019 0210465.003.0001

Fugali, E. (2016). The role of tactility in the constitution of embodied experience. *Phenomenology and Mind*, (4), 54-60. https://doi.org/10.13128/Phe Mi-19588

Gallese, V. (2005). Embodied simulation: From neurons to phenomenal experience. Phenomenology and the Cognitive Sciences, 4, 23-48. https://doi.org/10.1007/s11097-005-4737-z

Gallese, V., Sinigaglia, C. (2018). Embodied resonance. In A. Newen, L. de Bruin, S. Gallagher (Eds.), The Oxford handbook of 4E cognition. Oxford: Oxford University Press, 417-432. https://doi.org/10.1093/oxfordhb/9780198735410.013.22

Geller, S. M., & Greenberg, L. S. (2002). Therapeutic Presence: Therapists' experience of presence in the psychotherapy. Person-Centered & Experiential Psychotherapies, 1(1-2): 71-86. https://doi.org/10.1080/14779 757.2002.9688279

Geller, S., & Porges, S. (2014). Therapeutic presence: Neurophysiological mechanisms mediating feeling safe in therapeutic telationships. Journal of Psychotherapy Integration, 24(3), 178-19. http://dx.doi.org/10.1037/ a0037511

Gene-Cos, N., Fisher, J., Ogden, P., & Cantrel, A. (2016). Sensorimotor psychotherapy group therapy in the treatment of complex PTSD. SciMedCentral: Annals of Psychiatry and Mental Health, 11(1), 1-10.

Hayes, A. F., & Coutts, J. J. (2020). Use Omega rather than Cronbach's alpha for estimating reliability. But.... Communication Methods and Measures, 14(1). https://doi.org/10.1080/19312458.2020.1718629

Innamorati, M., Ebisch, S., Gallese, V., & Saggino, A. (2019). A bidimensional measure of empathy: Empathic Experience Scale. PLoS ONE, 14(4) e0216164. https://doi.org/10.1371/journal.pone.0216164

JASP Team (2022). JASP (Version 0.16.2) [Computer software].

Jong, de-Bouwmeester, V. (2016). Vitaliteit als onderdeel van flourishing. Een onderzoek naar de mogelijkheid van het toevoegen van het aspect vitaliteit aan een meetinstrument voor floreren. (Master's thesis). University of Twente. http://essay.utwente.nl/69595/

Keysers, C., Kaas, J., & Gazolla, V. (2010). Somatosensation in social perception. Nature Reviews Neuroscience, 11, 417-428. https://doi.org/10.1038/nrn2833

Kitayama, S. (1991). Impairment of perception by positive and negative affect. Cognition and Emotion, 5(1), 255-274. https://doi.org/10.1080/02699939108411040

Klabbers, G. (2022). Measuring patient well-being: An explanatory study of the Haptotherapeutic Well-Being Scale. International Journal of Haptonomy & Haptotherapy, 1, 1-7.

Klabbers, G. (2018). Can haptotherapy reduce rear of childbirth? Some first answers from a randomized controlled trial (Ph.D. thesis). Tilburg University. https://www.persistent-identifier.nl/urn:nbn:nl:ui:12-c1eba7de-8794-4431-894f-8d1f7af7097e

Körner, A., Topolinski, S., & Strack, F. (2015). Routes to embodiment. Frontiers in Psychology, 6, 940. https:// doi.org/10.3389/fpsyg.2015.00940

van der Kolk, B. (2014). The body keeps the score: Brain, mind, and body in the healing of trauma. Penguin Random House.

Krieger, D., Peper, E., & Ancoli, S. (1979). Therapeutic touch: searching for evidence of physiological change. The American Journal of Nursing, 79(4), 660-661. 0.1097/00000446-197904000-00051

Lee, M. S., Kim, J. I., & Ernst, E. (2011). Massage therapy for children with autism spectrum disorder. Journal of Clinical Psychiatry, 72(3), 406-11. 10.4088/JCP.09r05848whi.

Levine, P. A. (2010). In an unspoken voice: How the body releases trauma and restores goodness. North Atlantic Books.

Linden, D. (2016). Touch: The science of hand, heart, and mind. Penguin Publishing Group.

Linzarini, A., Cebotari, V., Richardson, D., Vrolijk, M., & Cunsolo, S. (2021). How enriching sensory awareness develops and affects well-being throughout childhood. (Innocenti Working Papers No. 2021-12). UNICEF Office of Research – Innocenti.

Longo, M. R., Schuur, F., Kammers, M. P. M., Tsakiris, M., & Haggard, P. (2008). What is embodiment? A psychometric approach. Cognition, 107(3), 978-998. https://doi.org/10.1016/j.cognition.2007.12.004

McGlone, F., Wessberg, J., & Olausson, H. (2014). Discriminative and affective touch: sensing and feeling. Neuron, 82(4), 737-755. 10.1016/j.neuron.2014.05.001

Mehling, W.E., Gopisetty, V., Daubenmier, J., Price, C.J., Hecht, F.M., & Stewart, A. (2009). Body awareness: Construct and self-report measures. PLoS ONE, 4(5), e5614. https://doi.org/10.1371/journal.pone.0005614

Motluk, A. (2008, May 12). How the brain detects the emotions of others. New Scientist.

Neto, H. P., Bicalho, E., Bortolazzo, G. (2021). Interoception and emotion: A potential mechanism for intervention with manual treatment. Cureus, 13(6), e15923. 10.7759/cureus.15923

Niedenthal, P. (2007). Embodying Emotion. Science, 316(5827), 1002-1005. 10.1126/science.1136930.

van Noort, W. (2022, May 12). Kom eens uit je hoofd, en ga eens in je lijf. NRC.

Ogden, P., Minton, K., & Pain, C. (2006). Trauma and the body. A sensorimotor approach to psychotherapy. W.W. Norton.

Olausson, H., Lamarre, Y., Backlund, H., Morin, C., Wallin, B. G., Starck, G., Ekholm, S., Strigo, I., Worsley, K., Vallbo, Å. B., & Bushnell, M. C. (2002). Unmyelinated tactile afferents signal touch and project to insular cortex. Nature Neuroscience, 5(9), 900-4. 10.1038/nn896.

Porges, S. (2009). The polyvagal theory: New insights into adaptive reactions of the autonomic nervous system. Cleveland Clinic Journal of Medicine, 76(Suppl 2), S86-S90. 10.3949/ccjm.76.s2.17

Price, C., Hooven, C. (2018). Interoceptive awareness skills for emotion regulation: Theory and approach of mindful awareness in body-oriented therapy (MABT). Frontiers in Psychology, 28(9), 798. 10.3389/ fpsyg.2018.00798

Ratcliffe, M. (2012). The phenomenology of existential feelings. In J. Fingerhut & S. Marienberg (Eds.), Feelings of Being Alive (pp. 23-54). De Gruyter. 10.1515/9783110246599.23

Rizolatti, G., & Caruana, F. (2017). How do we feel the emotions of others? Frontiers for Young Minds, 5(36). 10.3389/frym.2017.00036

Saarinen, J. (2018). A critical examination of existential feeling. Phenomenology and the Cognitive Sciences, 17(2), 363-374. https://doi.org/10.1007/s11097-017-9512-4

Scharstuhl, G. C. (2020a). Postnatal parent-child guidance in water. International Journal of Haptonomy and Haptotherapy, 1, 1-9.

Scharstuhl, G. C., van Banning, T. (2020b). Releasing early childhood fears through haptotherapeutic guidance in water: Experiences of a therapist and a client. International Journal of Haptonomy and Haptotherapy, 4, 15-25.

Shields, S. A., Mallory, M. E., & Simon, A. (1989). The Body Awareness Questionnaire: Reliability and validity. Journal of Personality Assessment, 53(4). https://doi.org/10.1207/s15327752jpa5304_16

Stalikas, A., & Fitzpatrick, M. (2008). Positive emotions in psychotherapy theory, research, and practice: New kid on the block? Journal of Psychotherapy Integration, 18(2), 155-166. https://doi.org/10.1037/1053-0479.18.2.155

Strijk, J. E., Wendel-Vos, G. C. W., Picavet, H. S. J., Hofstetter, H., & Hildebrandt, V. H. (2015). Wat is vitaliteit en hoe is het te meten? Kerndimensies van vitaliteit en de Nederlandse Vitaliteitsmeter. Tijdschrift voor Gezondheidswetenschappen, 93(1), 32-40. 10.1007/s12508-015-0013-y

Sijtsma, K. (2009). On the use, the misuse, and the very limited usefulness of Cronbach's alpha. Psychometri*ka*, 74(1), 107-120. 10.1007/s11336-008-9101-0

Sijtsma, K. (2009). Over misverstanden rond Cronbachs alfa en de wenselijkheid van alternatieven. De Psycholoog, 44, 561-567.

Tabatabaee, A., Tafreshi, M. Z., Rassouli, M., Aledavood, S. A., AlaviMajd, H., & Farahmand, S. K. (2016). Effect of therapeutic touch in patients with cancer: A literature review. Medical Archives, 70(2), 142-147. 10.5455/medarh.2016.70.142-147

Tarsha, M., Park, S., & Tortora, S. (2019). Body-centered interventions for psychopathological conditions: A review. Frontiers in Psychology, 10, 2907. 10.3389/fpsyg.2019.02907

Veldman, F. (2004). Haptonomie: Amour et raison. Hors collection. Presses Universitaires de France. (In Dutch translation: Levenslust en levenskunst. Van der Veer Media 2007).

Veldman, F., & Soler, A. (2010). Dictionnaire de l'haptonomie: thesaurus haptonomicus. Soler. (In Dutch translation: Woordenboek van de haptonomie: Thesaurus haptonomicus. Uitgeverij Haptotherapie, 2013).

Verhoeven, D. (2013). Werken met gevoel. Geschiedenis van het beroep haptotherapeut in Nederland. Uitgeverij Verloren.

de Vignemont, F. (2014). Shared body representations and the 'Whose' system. *Neuropsychologia*, 55, 128-136. https://doi.org/10.1016/j.neuropsychologia.2013.08.013

Weze, C., Leathard, H., Grange, J., Tiplady, P., & Stevens, G. (2007). Healing by gentle touch ameliorates stress and other symptoms in people suffering with mental health disorders or psychological stress. Evidence-based Complementary and Alternative Medicine, 4(1), 115-123. 10.1093/ecam/nel052

Wibbels-Pancras, F. (2022). From surviving to living after a stroke: An initiative to structuring treatment after CVA from the haptoherapeutic perspective. International Journal of Haptonomy and Haptotherapy, 5, 36-45.

Ziemke, T. (2003). What's that thing embodiment? R. Alterman, D. Kirsch (Eds.). *Proceedings of the 25th Annual* Conference of the Cognitive Science Society (pp. 1305-1310). Taylor & Francis. https://www.taylorfrancis.com/ books/9781315799360/chapters/10.4324/9781315799360-105

Appendix

Questionnaire water as affective medium (QWAM-22). In our research, the Dutch version was used.

1. I feel fit and am ene	ergized		
ll		ll	
I do not agree at all			I agree completely
2. I have faith in myse	ılf		
II			
I do not agree at all			I agree completely
3. I am moving as a w	hole		
ll			
I do not agree at all			I agree completely
4. I can sense the space	e around me		
II			
I do not agree at all			I agree completely
5. I feel active and pur	poseful		
	- 	1 1	1 1
I do not agree at all	·	·	I agree completely
6. I (now) feel involve	d in my surroundings		
		1 1	
I do not agree at all			I agree completely
7. I am firmly standin	g on my legs		
		1 1	
I do not agree at all			I agree completely
8. I suffer from pain o	r discomfort		
II			
I do not agree at all			I agree completely

	Water As An Affective Medium
9. I feel present	
I do not agree at all	I agree completely
10. I feel close to myself	
ll	
I do not agree at all	I agree completely
11. I can sense my skin	
I do not agree at all	I agree completely
12. I feel I can take on the world	
_	
I do not agree at all	I agree completely
13. I am tired	
_	
I do not agree at all	I agree completely
14. I can sense where the others around me are	
I do not agree at all	I agree completely
15. I feel a lot of space (openness, freedom) in my	self
I do not agree at all	I agree completely
16. Next week I will immediately take on a new cha	allenge
I do not agree at all	I agree completely
17. I feel at home in this company	
I do not agree at all	I agree completely

Eleonore ten Thij, Moniek van Slagmaat, Truus Scharstuhl		
18. I am breathing calmly		
ll		
I do not agree at all	I agree comp.	letely
19. I feel a little skittish		
ll		
I do not agree at all	I agree comp	letely
20. I leave nothing to chance		
ll		
I do not agree at all	I agree comp.	letely
21. I now feel that every experience in life will make	ne stronger	
ll		
I do not agree at all	I agree comp.	letely
22. I am moving smoothly		
ll		
I do not agree at all	I agree comp	letely
23. I can sense the position of my body in this space		
lll		
I do not agree at all	I agree comp	letely
24. (I sense) I have clenched my jaws somewhat		
ll	ll	
I do not agree at all	I agree comp	letely
25. I feel calm and relaxed		
ll	ll	
I do not agree at all	I agree comp	letely
26. I feel lively		
	!!!	
I do not agree at all	I agree comp	letely

				Water As An Affective Medium
20 I can	n sense how I ca	n tuno in to oth	owa.	
27. I Can	selise flow i ca		ers	1 1 1
I do not	agree at all	<u> </u>	'	I agree completely
28. I can	n sense the chair	r / the earth sup	porting me	
	I		ll	
I do not	agree at all			I agree completely
29. I can	ı sense my body	(physical react	ions) clearly	
l	l			
I do not	agree at all			I agree completely
30. I wo	nder what the o	thers will think	of me	
l				
I do not	agree at all			I agree completely
31. I fee	el good about m	yself and my lif	e	
l				
I do not	agree at all			I agree completely
32. I get	energized by m	y plans for the	future	
l	I			
I do not	agree at all			I agree completely
33. I nov	w feel I can hand	lle unexpected	events well	
l				
I do not	agree at all			I agree completely