# **ORIGINAL PAPER**

# Survey on hand gestures relevance in patient practitioner communication: a homeopathic example



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Background: Gestures play an important role in medical communication. Methods: 94 homeopaths (Mean age 49.6 years, 20% male) completed a 20-item questionnaire on utilization and relevance of gestures in patients' symptom description. Results: After excluding nine items due to low validity (n = 4) or low item total correlation (n = 5), factor analysis of the questionnaire resulted in the following three dimensions explaining 66.6% of variance: 'Hand gestures in relation to verbal expressions' (5 items; Cronbach's  $\alpha$  = 0.81), 'Hand Gestures describing the experience of bodily and mental symptoms' (4 items; Cronbach's  $\alpha$  = 0.74) and 'practitioners' behavior and active attitude in observing hand gestures' (2 items; Cronbach's  $\alpha$  = 0.86).

*Conclusion:* The survey shows how homeopathic therapists view patients' hand gestures, whether they use these diagnostically and how this relates to their homeopathic practice. Practitioners with only homeopathic influence on this topic are highly congruent to findings on hand gestures from other domains. *Homeopathy* (2016) **105**, 233–239.

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**Keywords**: Hand gestures; Patient–practitioner communication; Survey; Homeopathy

## Introduction

Sensation Method is a new approach in case taking and analysis in homeopathy developed by a group of homeopathy headed by the Indian homeopathic doctor Rajan Sankaran. This approach focus in case taking is identifying a global pattern of perception in the various symptoms presented by the patient. In the analysis, these patterns are then related to proven and sometimes even extrapolated patterns from the homeopathic materia medica.<sup>1,2</sup> This approach is suggested to be an advancement of the concept of generalization in Bönninghausen and Boger by some authors.<sup>3–5</sup> Spontaneous hand gestures in the patients' narrative of symptoms are often considered vital in the identification of the specific pattern of experience. Examples for this phenomena of patients using hand gestures to describe otherwise not verbally expressible sensations has been repeatedly reported in case studies by Sensation Method homeopaths in their case taking.<sup>6–10</sup>

The debate in the homeopathic community regarding the innovative value of the Sensation Method has been highly controversial.<sup>11</sup> In order to provide a more evidence based approach to the discussion of Sensation Method we focused on the existing research on hand gestures as means of gathering meaning in general and of the patients' illness experience in specific.

In recent years, gestures have come into focus of linguistics and various other disciplines of the social science. While a variety of research is conducted in these fields, gestures only play a minor role in research on patient practitioner communication or are only reported in a very general and superficial manner.<sup>12</sup> This is even more astonishing as hand gestures are often used by patients in their description of symptom quality and severity and their

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experience of illness in particular with regards to pain experience as shown in a preliminary literature review by the authors.<sup>13</sup>

In clinical setting qualitative studies in the medical areas of general practice,<sup>14</sup> narratives on pain,<sup>15,16</sup> cardiology<sup>16,17</sup> and psychotherapy<sup>18</sup> examined hand gestures functions in conveying meaning. In his work on the gestural re-embodiment of symptoms<sup>14</sup> demonstrated that gestures are used by the patients to visualize and present their complaints using fragments of transcripts with pictures from vast collection of video recordings from patient--practitioner interaction. In 2002, Hyden & Peolsson reanalyzed video recordings of patients' narratives on their pain experience. They found patients to use gestures to convey information or content of speech in pointing, iconic and symbolic.<sup>15</sup> The pointing function was further investigated by Stukenbrock<sup>24</sup> in the setting of interdisciplinary pain conference. She found patients and physicians to use pointing gestures orchestrated to generate a referential system of discourse. A systematic feature approached was used to quantify the information content of speech and hand gestures in the communication of pain.<sup>19</sup> This study showed that information on the location of symptoms are mainly convey in gestures, whereas pain quality is most often convey by a not complementing combination of both.

Of the reviewed literature only a fraction of the studies explicitly investigated hand gestures in the patient—practitioner interaction.<sup>10,14,17,20–24</sup> Some found that in patient—practitioner interaction hand gestures facilitated a mutual alignment.<sup>15,25–27</sup> Other studies reported or advised the use of gestures intentionally as intervention.<sup>23,25–28</sup>

The use of hand gestures is connected to the concept of their role in conceptualization and revealing of implicit knowledge.<sup>29</sup> The idea of hand gestures as a spyhole into patients implicit or subconscious knowledge is wide spread in time and field of research.<sup>7,8,10,23,26,28,30–32</sup> Yet a more specific idea is that spontaneous hand gestures can help patients in conceptualization.<sup>15,26–28,31,33</sup> This is also connected to the ideas of gestures representing a global – that means somatic and mental – experience pattern.<sup>8,10,22,26,28,31,34,35</sup>

The phenomena of patients using gestures to describe otherwise not verbally expressible sensations has also been reported in case studies by Sensation Method homeopaths in their case taking<sup>6-10</sup> and focusing therapists in exploration of patients' illness experience.<sup>26</sup>

However, little is known about general and Sensation Method homeopathy practitioners' perspective, usage and appraisal of manual co-speech gestures and their relevance for practice. This pilot-survey was designed to gain a better understanding of the perspective, usage, appraisal and general relevance of manual co-speech gestures by these practitioners. Taking the importance of gestures in homeopathic case taking of Sensation Method into account, we decided to conduct the survey in a sample of Sensation Method practitioners attending to a seminar on further medical education on the Sensation Method. We aimed at exploring whether practitioners of sensation

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method were agreeing to statements in accordance to results described in the literature of hand gesture research in medical communication and were consciously using patients' hand gestures in the case taking process.

## Material and methods

## Questionnaire

A core group of three physicians and one methodologist developed a pool of items in a consensus process based upon the presumed and confirmed functions and meanings of patients' hand gestures described in a prior pilot systematic review.<sup>13</sup> The questions were designed to reflect the dimensions of 'relationship between speech and hand gesture', and 'observation of hand gesture'. The reported theoretical perspectives and practitioners' reactions on patients' hand gestures were formed into affirmative statements. Items were scored on a 5-point scale from disagreement to agreement (0 - does not apply at all; 1)- does not truly apply; 2 - don't know; 3 - applies quite a bit; 4 - applies very much). The final questionnaire included 20 items on perspective on, utilization and relevance of gestures in patients' symptom description and 14 items on sociodemographic data and context of work.

#### Study population

A convenience sample of 306 homeopathic practitioners attending two seminars on Sensation Method homeopathy with varying degrees of expertise were asked to participate. The attending homeopaths were physicians as well as health practitioners (German: 'Heilpraktiker'). In Germany, health practitioners are licensed health care professionals who have passed an exam by a public health office on basic medical knowledge. A health practitioner may practice a wide range of health services and various complementary and alternative medicine (CAM) practices including homeopathy.<sup>36</sup>

The questionnaires were distributed to the seminar attendees by distribution to their seats or were handed the questionnaire personally at the beginning of the two to three day seminars on the Sensation Method homeopathy in Munich and Badenweiler in Spring 2010.

Participants were instructed to carefully read the questions and answer the questions without long reflection. They were informed that there were neither right nor wrong answers since everybody would have made different experiences in practice and would answer on these grounds differently. They were asked to fill out and instructed to return the questionnaires on leaving at the door at of the seminar by the seminar organization in a specially designed container. All participants were informed of the purpose of the study and were assured of confidentiality, and gave informed consent to participate.

#### Ethical considerations and data security

As this was a non-invasive questionnaire survey there was no necessity to obtain a vote from a local research ethics committee.<sup>37</sup> However, the rules for good

epidemiological practice were fully applied. All questionnaires were strictly anonymized and externally stored at the University of Witten/Herdecke (Germany) according to the requirements of the responsible data security and protection official.

#### Statistical analysis

To detect structural relations within the items questioning the participants' perspective on patients' gestures function and meaning, their utilization and the practitioner's reaction to them was analyzed using a factor analysis. In order to eliminate items from the item pool that were not contributing to the questionnaire reliability, the reliability of the scale and distinct sub-scales was evaluated with item-total correlations, which reflect the degree to which one items contributes to a particular scale measure. Items with a very high (r > 0.8) and very low (r < 0.2) item-total correlation were excluded from the subsequent factor analysis.

Factor analysis was performed by means of Principal Components Analysis and Varimax Rotation in order to arrive at the solution that demonstrates both the best simple structure and the most coherence. Tests on sampling adequacy (Kaiser-Meyer-Olkin criterion) and multicollinearity (Bartlett test of sphericity) were undertaken prior to factor extraction to ensure that the scale items were appropriate for principle component analysis. A Kaiser-Meyer-Olkin criterion  $\geq 0.50$  and a Bartlett test of sphericity with p < 0.05 were regarded as mandatory for factor analysis.

Examination of the internal consistency of the item pool was performed by calculating Cronbach's alpha coefficient for both the complete item pool and the subscales generated by the factor analysis. Meaningful factors were retained and interpreted based on their psychometric properties.

To detect differences is the scales with respect to sociodemographic data (i.e. gender or profession) univariate statistical tests were applied. For nominal data, Chi-square tests were used and for continuous data t-test or analysis of variance was applied. A p-value of 0.05 was regarded a statistically significant. Statistical analysis was performed using SPSS 22.0 for Windows.

## Results

In total, 306 homeopaths attended the seminars. Table 1 provides an overview of the participants divided by the cit-

ies the seminars took place. From the 306 seminar attendants, 94 (30%) completed the questionnaire and were included in the survey. The survey-participants consisted of 54 physicians (57.4%) and 40 health practitioners (42.6%). The mean age was 49.6 years, 19.1% of the participants were male. The mean duration of homeopathic practice was 12.4 years. A complete description of the sample is given in Table 2.

#### **Factor analysis**

At first, a reliability analysis was carried out to find out, which items had a sufficiently high loading. From this item pool, 5 out of 20 questions were excluded after reliability analysis due to low item total correlations: items 4, 7, 8, 15 and 16 (see Table 3). These statements regarded gestures as simply reflecting psycho-motoric agitation, restlessness or deflecting the practitioners' attention and were answered inconsistently. The remaining 15 items were included in a primary factor analysis, which pointed to a 4-factor solution, explaining 65.8% of variance.

In a second step Item 3, stating the importance of hand gestures in the symptom description for diagnostics was excluded because of strong side loadings. The items 12,

Table 2 Participant characteristics

	Physicians	Health practitioners	Total
Gender			
Male	11 (20.4%)	7 (17.5%)	18 (19.1%)
Female	43 (79.6%	33 (82.5%)	76 (80.9%)
Age	,	( )	( )
Mean $\pm$ Stdv.	$\textbf{50.2} \pm \textbf{6.0}$	$\textbf{48.8} \pm \textbf{8.5}$	$49.61\pm7.2$
Median	50	48	49
Years of practice			
Mean $\pm$ Stdv.	$\textbf{16.3} \pm \textbf{6.2}$	$11.1\pm7.9$	$13.5\pm7.6$
Median	16	10	13.5
Years of homeop	athic practice		
Mean $\pm$ Stdv.	$\textbf{13.9} \pm \textbf{5.9}$	$10.4\pm8.0$	$\textbf{12.41} \pm \textbf{7.0}$
Median	15	9	12
Patients per day			
Mean $\pm$ Stdv.			$18.5\pm16.8$
Min./Max.	2.5/60	0.4/20	0.4/60
Median	20	5	12.5
Proportion of hom	neopathy in da	ily work	
0%	0	0	0
<25%	14 (27.5%)	1 (2.6%)	15 (16.9%)
25-50%	7 (13.7%)	2 (5.3%)	9 (10.1%)
50-75%	8 (15.7%)	4 (10.5%)	12 (11.2%)
>75%	10 (19.6%)	11 (28.9%)	21 (23.6%)
100%	12 (23.5%)	20 (52.6%)	32 (36.0%)

Table 1	Participants and responders
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	Munich		Badenweiler		Total		
	Total	Responders	Total	Responders	Total	Responders	
Seminar participants Gender	164	59 (36.0%)	142	35 (24.6%)	306	94 (30.7%)	
Female	140 (85.4%)	49 (83.1%)	107 (75.4%)	27 (77.1%)	247 (80.7%)	76 (80.9%)	
Male	24 (14.6%) <sup>′</sup>	10 (16.9%)	35 (24.6%) <sup>′</sup>	8 (22.9%)	59 (19.3%) <sup>′</sup>	18 (19.1%)	
Profession	· · · ·	· · · ·	( )	· · · ·	( )	,	
Physicians	104 (63.4%)	40 (67.8%)	43 (30.3%)	14 (40.0%)	147 (48.0%)	54 (57.4%)	
Health practitioners	60 (36.6%)	19 (32.2%)	99 (69.7%)	21 (60.0%)	159 (52.0%)	40 (43.6%)	

Table 3 Gesture related items excluded in the factor analysis	Table 3	Gesture related items excluded in the factor analysis
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	hand gestures convey to me primarily a

- general impression of the patients' temperament7 Paying attention to patients' hand gestures distracts me from the verbal message
- 8 Gestures are meaningless movements and signs of an inner restlessness
- 15 Excessive gesturing is indicative for a state of akathisia
- 16 Excessive gesturing leads me to consider differential diagnoses

9 and 11 loadings to factor 4 were excluded due to a low validity given in a value of Cronbach's alpha of 0.515. The items of this factor were stating gestures to express the same sensation as a verbal utterance (item 12), convey the patients' central problems (item 9) and providing insight into the patients' subconscious thoughts (item 11).

The remaining 11 items formed a set of three factors explaining 66.6% of variance. The factor loadings and item means are presented in Table 4.

The first factor with five items describes 'Hand gestures in relation to verbal expressions (HGV)'. It includes three functions of hand gesture helping to cope with the difficulty in describing a sensation. The items 13 and 14 regard hand gestures speech facilitative and positive influence in conceptualization of new or not yet conceptualized sensations. The items 6, 10 and 20 address the gestures cospeech relationship of containing information and meaning. Item 10 states the illustrative function of hand gestures accompanying speech. This implies mirroring the verbal content of an utterance in the visual dimensions of space in form, movement, direction and position. The importance of the hand gestures role in the communication process is increased in items 20 and 6. Here hand gestures contain

Table 4	Distribution of responses and	d item mean values of each iten	and results of the factor	analysis (bold h	ighlighting factor loadings >0	1.6)
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No	Item	Resulting factor loadings		N Mean $\pm$ SD	) Response						
		HGV	HGS	HGO			Does not apply at all	Does not truly apply		Applies quite a bit	Applies very much
13	Patients gesticulate more often when a sensation is difficult to put into words	0.876			94	3.4 ± 1.0	2 (2.1%)	6 (6.4%)	7 (7.4%)	37 (39.4%)	42 (44.7%)
14	Patients gesticulate more often when a word/verbal description is difficult to find	0.856			92	$\textbf{3.4} \pm \textbf{0.9}$	2 (2.1%)	6 (6.4%)	12 (12.8%)	41 (43.6%)	31 (33.0%)
10	Speech accompanying gestures are used by patients to illustrate statements/utterances	0.678		-0.322	92	$\textbf{2.4} \pm \textbf{1.1}$	1 (1.1%)	3 (3.2%)	10 (10.6%)	52 (55.3%)	26 (27.7%)
20	Gestures are especially interesting for me when they contradict the verbal utterance/statement.	0.635		0.398	93	$\textbf{2.3} \pm \textbf{1.1}$	4 (4.3%)	4 (4.3%)	11 (11.7%)	26 (27.7%)	48 (51.1%)
6	Hand gestures convey additional information to a message not found in the verbal utterance	0.623	0.380		91	$\textbf{3.3} \pm \textbf{1.1}$	1 (1.1%)	3 (3.2%)	7 (7.4%)	39 (41.5%)	41 (43.6%)
18	Patients use gestures to underline/emphasize emotional and mental symptoms		0.768		94	$\textbf{3.2}\pm\textbf{1.0}$	1 (1.1%)	2 (2.1%)	9 (9.6%)	58 (61.7%)	24 (25.5%)
5	The patients' inner experience is often better expressed by gesture than verbally		0.746		92	$\textbf{2.9} \pm \textbf{1.1}$	0 (0.0%)	3 (3.2%)	14 (14.9%)	36 (38.3%)	39 (41.5%)
17	Patients use gestures to underline/emphasize somatic symptoms		0.718		94	$\textbf{2.8}\pm\textbf{0.9}$	1 (1.1%)	9 (9.6%)	11 (11.7%)	55 (58.5%)	18 (19.1%)
19	Gestures are especially important to me when they occur repeatedly in the patients' different complaints		0.661	0.416	94	$\textbf{3.4} \pm \textbf{0.7}$	2 (2.1%)	2 (2.1%)	9 (9.6%)	23 (24.5%)	58 (61.7%)
2	During patients' symptom descriptions hand gestures help me to assess which of the statements are more			0.870	93	3.4 ± 1.1	0 (0.0%)	2 (2.1%)	6 (6.4%)	32 (34.0%)	53 (56.4%)
1	important for the patient During the patients' symptom description I regularly look out for speech accompanying hand gestures			0.868	94	$\textbf{3.4} \pm \textbf{0.7}$	0 (0.0%)	4(4.3%)	1 (v1.1%)	42 (44.7%)	47 (50.0%)

additional or contrasting information concerning the verbal statement. This factor explains 34.4% of the variance and its internal consistency is excellent (Cronbach's  $\alpha = 0.81$ ).

The second factor includes four items is about 'Hand Gestures describing the experience of bodily and mental symptoms' (HGS). The two items 17 and 18 regard hand gestures emphasizing somatic and emotional symptoms. Item 5 proposes the patients' inner experience often better convey by the accompanying hand gestures than the verbal statement. Item 19 states the importance of the reoccurrences in the patients hand gestures in the description of further complaints. This factor explains 16.8% of the variance and its internal consistency is good (Cronbach's  $\alpha = 0.74$ ).

The last factor regarding the 'practitioners' behavior and active attitude in observing hand gestures (HGO)'. Item 1 states the active and regular attention towards the patients' hand gestures. Item 2 asks for the role of gesture to identify the relevance of a verbal statement. Together they reflect the most practical questions to identify regular gesture observing behavior. This factor explains 15.5% of the variance and its internal consistency is excellent (Cronbach's  $\alpha = 0.86$ ).

#### Subgroup analysis

Scale values were checked for group differences between professions (physicians vs. health practitioners) and gender and for correlations with years of practice and proportion of homeopathy of daily practice. With respect to gender, we found significant differences for the scale: compared to female participants, males showed higher values in the HGV-scale (86.4  $\pm$  11.2 vs. 76.6  $\pm$  18.4; p = 0.034). Another significant result was found when comparing physicians with health practitioners. In this subgroup, physicians were found to have higher values in the HGS-scale (82.0  $\pm$  13.7 vs. 74.7  $\pm$  14.9). With respect to the HGO-scale significant result were found when comparing the participants with respect to the amount of Sensation Method homeopathy. Although values in all scales steadily increased from participants who never practiced Sensation Method homeopathy (HGV: 74.3  $\pm$  6.1; HGS: 73.3  $\pm$  13.1; HGO:  $61.4 \pm 18.9$ ) to those who always practiced SMhomeopathy (HGV: 81.9  $\pm$  20.2; HGS: 82.7  $\pm$  16.4; HGO:  $95.5 \pm 8.8$ ) one way analysis of variance (ANOVA) only found a highly significant difference in observations of gestures (F = 12.98; p < 0.001). No associations of the scales with Age ( $r_{HGV} = -0.056$ ;  $r_{HGS} = -0.097$ ;  $r_{HGO} = -0.127$ ), Practice duration ( $r_{HGV} = 0.049$ ;  $r_{HGS} = -0.095$ ;  $r_{HGO} = 0.041$ ), Homeopathic experience  $(r_{HGV} = 0.133; r_{HGS} = 0.093; r_{HGO} = 0.114)$  and Patient contacts ( $r_{HGV} = -0.033$ ;  $r_{HGS} = 0.061$ ;  $r_{HGO} = -0.194$ ) were found.

## Discussion

Gestures play an important role in human communication. However, less attention has been paid for patient gestures in communicating with doctors, therapists or health practitioners by researchers and the practitioners themselves. This survey to our knowledge is the first to inquire practitioners about the relevance of hand gestures in patient practitioner communication using a sample of homeopaths. We found that Sensation Method homeopaths do observe and give importance to pay attention to hand gestures in their daily work (Table 5). They share many observations and views identified by a previous systematic review with gesture researchers in- and outside the medical field. Thus the factors found in our survey can directly be related to the preliminary results from related research of our group.<sup>13</sup>

The first factor with five items describes 'hand gestures in relation to verbal expressions (HGV)'. It includes three functions of hand gesture helping to cope with the difficulty in describing a sensation. Items 13 and 14 describe hand gestures being speech facilitative with a positive influence in conceptualization of new or not yet conceptualized sensations. These functions have been proposed by gesture researchers and practitioners for its facilitative effect speech production on and conceptualization.<sup>15,26–28,31,33</sup> The items 6, 10 and 20 address the gestures co-speech relationship of containing information and meaning. Item 10 states the illustrative function of hand gestures accompanying speech. This implies mirroring the verbal content of an utterance in the visual dimensions of space in form, movement, direction and position.<sup>14–17,21–23,25,27,28,30,31,33,38–40</sup> The importance of the hand gestures role in the communication process is stipulated in items 20 and 6. In the review we found gestures reported to contain additional<sup>15–17,19–21,2</sup> 23,26-28,31,38,40 or contrasting and contradicting information in regard to the verbal statement.<sup>19,21,26,27,31,38</sup>

The second factor including four items is about 'hand gestures describing the experience of bodily and mental symptoms (HGS)'. Corresponding to the items 17 and 18 they regard hand gestures emphasizing somatic<sup>14–17,19,21,22,27,28,31,33,38–41</sup> and emotional

 Table 5
 Factors in relation to sociomedical parameters (bold type denote significant differences)

	Verbal (HGV)	Symptoms (HGS)	Observation (HGO)
Gender			
Male	$\textbf{86.4} \pm \textbf{11.2}$	$81.5 \pm 15.0$	$\textbf{90.3} \pm \textbf{12.6}$
Female	$\textbf{76.6} \pm \textbf{18.4}$	$78.5 \pm 14.5$	$84.7 \pm 17.6$
Profession			
Physician	$80.0\pm19.0$	$\textbf{82.0} \pm \textbf{13.7}$	$84.7 \pm 18.1$
Health practitioner	$76.5\pm15.4$	$\textbf{74.7} \pm \textbf{14.9}$	$87.2 \pm 15.0$
Usage of sensation			
method in daily practic	e		
Always	$81.9 \pm 20.2$	$82.7 \pm 16.4$	$\textbf{95.5} \pm \textbf{8.8}$
Often	$\textbf{79.4} \pm \textbf{16.4}$	$79.1 \pm 11.6$	$\textbf{88.8} \pm \textbf{14.6}$
Sometimes	$\textbf{77.9} \pm \textbf{16.6}$	$\textbf{76.3} \pm \textbf{21.0}$	$\textbf{81.7} \pm \textbf{14.1}$
Never/seldom	$74.3 \pm 6.1$	$\textbf{73.3} \pm \textbf{13.1}$	$\textbf{61.4} \pm \textbf{18.9}$
Correlations			
Age	-0.056	-0.097	-0.127
Practice duration	0.049	-0.095	0.041
Homeopathic	0.133	0.093	0.114
experience			
Patient contacts	-0.033	0.061	-0.194

symptoms.<sup>15–17,22,23,26–28,30,31,33</sup> Item 5 proposes the patients' inner experience often better convey by the accompanying hand gestures than the verbal statement. Item 19 states the importance of reoccurrences in the patients hand gestures in the description of further complaints. This is especially proposed authors of sensation method homeopathy,<sup>22,28,35</sup> but also by gesture researcher.<sup>31</sup>

The last factor focuses on the 'practitioners' behavior and active attitude in observing hand gestures (HGO)'. Item 1 states the active and regular attention towards the patients' hand gestures. This is supported by general practitioners<sup>22,26,28,39,40</sup> and second person method<sup>28</sup> as well as focusing therapy.<sup>26</sup> Item 2 asked for the role of gesture to identify the relevance of a verbal statement. Hand gestures were reported and advised as intentionally used as intervention by some researchers.<sup>23,25–28</sup>

Significant differences in the scales can partly be interpreted in the light of the results from other studies. With respect to the usage of sensation method in daily practice we found a highly significant difference in the observation of hand gestures (HGO-scale) which is not surprising if we consider the importance of hand gestures for this approach.<sup>28</sup> This leads to the assumption, that active and conscious observation of hand gestures will probably also be linked to a practical usability of hand gestures in the process of gaining information for other non-homeopathic medical practitioners.

A mixed situation is given for the gender difference found in the scale describing 'Hand gestures in relation to verbal expressions (HGV)'. Already in 1975 Petersen in a small study found that males exhibited more nonverbal gesturing than females,<sup>42</sup> other studies however do not give evidence for gender differences in accounting for hand gestures in relation to verbal expressions.<sup>43</sup> Further studies with homeopathic and non-homeopathic partitions would be needed to explain this result.

Even more surprisingly, we found that physicians scored higher than health practitioners in hand gestures describing the experience of bodily and mental symptoms (HGS). This occurrence might be related to the longer experience of working with patients in years total as well as in regard to homeopathic practice (Table 2). Nevertheless, due to lack in research on differences in nonverbal communicative behavior between physicians and health practitioners in Germany this question cannot yet be answered.

Until now, research mainly focused on patients' hand gestures and spontaneous or unintentional practitioners' hand gestures. Further research should include systematic analysis of Sensation Method homeopaths case taking or focusing therapists who intentionally observe and use hand gestures to reach a deeper meaning of the patients' expression. The most suited methodological orientation would be given by a semantic feature approach,<sup>19,44</sup> while focusing on the practitioners hand gestures too.<sup>45</sup>

With respect to internal and external validity, we found a distinct correlation of 'usage of Sensation Method in daily practice' (Table 5) with all three factors resulting from the factor analysis. This underpins a high adherence and coher-

ence of homeopaths using the Sensation Method always or often in their daily practice with observation and usage of hand gestures for case taking. Peculiarly even homeopaths never using the Sensation Method in their daily practice still give surprisingly high confirmations on all three factors. This would be expected to differ more strongly if the sample had included homeopaths not interested in learning the practical application of the Sensation Method. Thus, generalization to all homeopathic practitioners is questionable and remains a subject of further research.

#### Limitations

This survey has limitations, which have to be minded when interpreting the results. Firstly, only sensation method homeopaths or those interested in the method participated in this survey, which limits the generalizability of the results not only with respect to conventional medicine but also to the field of homeopathy. Thus, there is a need for replication of our survey with homeopaths not interested in the Sensation Method as well as other medical practitioners such as cardiologists, pain specialist and other health professions like nurses and psychologists. Secondly, we limited our survey on hand gestures and did not ask for the observation of gaze. Robinson already pointed out the importance of gaze in doctor-patient consultations.<sup>46</sup> Gaze was also investigated in some studies investigating hand gestures contribution in the communication of pain.<sup>15,24</sup>

## Conclusion

This survey shows how Sensation Method homeopaths actively observe hand gestures and judge them to help patients in expressing their symptoms qualities and illness experience. In addition, the results of this survey are highly congruent to findings on hand gestures from other domains. This supports the practical appliance of hand gestures in homeopathic case taking on an experimental level.

Whether other physicians or medical professionals share this view, should be investigated in the future. Further research should also investigate the actual practice of hand gestures observation, interaction and analysis of Sensation Method homeopaths case taking.

## **Declaration of competing interests**

The authors declare no conflicting interests.

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#### Appendix A. Supplementary data

Supplementary data related to this article can be found at http://dx.doi.org/10.1016/j.homp.2016.02.005.

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