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Evaluation of haptotherapy for patients with cancer treated with chemotherapy at a day clinic

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Abstract

Objective: The purpose of this study was to evaluate a haptotherapeutic treatment and its effects on the perceived well-being of patients with cancer treated with chemotherapy in day care.
Methods: The study had a pre-test–post-test semi-experimental design, with 31 patients in the intervention group and 26 in the control group. 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. Standardized questionnaires were used measuring perceived well-being and satisfaction with care (haptotherapy). Indicators of well-being measured were quality of life, mood, meaning in life, general functioning, physical and psychological symptoms, sleep quality and body awareness. The intervention consisted of five haptotherapy sessions of 45 minutes each. Patients in the control condition received standard medical care.
Results: Patients were highly satisfied with the haptotherapy treatment, and especially valued the personal attention and the relaxation they experienced. The haptotherapy treatment improved both the perceived general quality of life and the perceived cognitive and social functioning of patients. No improvement was found for mood, meaning in life, general functioning, physical symptoms, sleep quality and body awareness.
Conclusion: It may be concluded that haptotherapy positively contributes to several indicators of perceived well-being of patients with cancer during the period they receive chemotherapy. More rigorous experimental studies are necessary in this field, especially concerning randomization, number of participants and homogeneity of the sample.
Practice implications: Haptotherapy as a type of complementary medicine is a potentially valuable and effective intervention to raise the well-being of patients with cancer undergoing invasive treatments like chemotherapy.

Keywords: Haptotherapy; Cancer; Day clinic; Chemotherapy

1. Introduction

In addition to physical suffering, cancer brings with it many problems on a psychological and social level. Care for patients with cancer is therefore not only aimed at their medical treatment, but also at preserving their quality of life. In order to be able to contribute to their quality of life themselves, patients with cancer are turning more and more to complementary care, such as massage, creative therapy, music therapy and diet [1–5]. Research into the effects of different types of massage has shown positive effects on the experienced levels of fear, pain, stress, nausea and quality of life [6–12].

In the research we carried out, the effects of haptotherapy were studied. This is a form of complementary care to which touch is central, as with massage. Touch is very important for many patients with cancer because it is a basic human

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need, which contributes essentially to well-being [13–15]. In haptotherapy, by means of touch patients are learned to connect with their feelings and from there they learn how to deal with their illness, with themselves and with the world around them in a better way. A more elaborate explanation of haptotherapy has been presented by Pollman-Wardenier et al. [16]. This can lead to a reduction in symptoms and an improvement in quality of life [16]. It is assumed that haptotherapy can be especially helpful for cancer patients, since they are undergoing invasive treatments like chemotherapy that can have a serious impact on physical functioning, body awareness and self image. There are no data available on results of research into haptotherapy, neither from publication databases (Pubmed and Psychlit), nor from the Dutch Association of Haptotherapy [17]. The aim of this exploratory study was to pursue an answer to the following questions:

(1) How do the patients value the haptotherapy treatment they received during the period of chemotherapy?
(2) Which effects does the haptotherapy treatment have on the quality of life, mood, meaning in life, general functioning, physical and psychological symptoms, sleep quality and body awareness of patients with cancer?

2. Method

The study was of a semi-experimental design, using an intervention and a matched control group, which were both studied pre- and post-test.

2.1. Procedure

Included in the intervention group were patients with cancer of 18 years or older who were treated with chemotherapy for the first time between April 2000 and November 2002 at the day clinic of the Diakonessenhuis Zeist. Haptotherapy was offered to all patients during the initial consultation with the oncology nurse. Patients who decided to take up the offer were asked if they were willing to take part in the research. From the nurse they received an introductory letter and the pre-test questionnaire. Patients were required to complete the pre-test prior to the first chemotherapy treatment, or if that was not possible, prior to the first haptotherapy treatment. The five intervention sessions were given during the period of chemotherapy, according to the wishes of the patient. The period between the first and last haptotherapy session therefore varied between 3 and 36 weeks, with an average of 11.5 (S.D. = 6.5). For reasons of practical convenience, the post-test was given to the patient by the haptotherapist. This was done at the last or the penultimate treatment session. Both questionnaires could be completed at home or in the hospital and be delivered to the nurse in a sealed envelope.

The control group consisted of patients from three other hospitals in the Utrecht region, who started their first chemotherapy treatment between September 2002 and March 2003. Every patient enrolled in the control group was matched as good as possible to a patient in the intervention group with respect to sex, age, type of cancer, type of chemotherapy, evidence of metastasis and prognosis. On the basis of this matching the period between pre- and post-test for each control patient was made equal to the period of the patient they were matched with. Post-tests were given to the patients by a nurse.

Control patients were excluded from the study if they used any form of complementary care in which, as with haptotherapy, touch was central during the period of chemotherapy.

2.2. Intervention

The intervention consisted of five haptotherapy sessions spread across the period of chemotherapy. The sessions lasted 45 minutes each and were carried out in the hospital by two haptotherapists on days when patients received chemotherapy. Standard haptotherapy treatment covers an average of 7–10 sessions of 45–60 min each. In this respect, the intervention in this study is only slightly different from standard haptotherapy. An important adjustment, however, is that the aim of the intervention in this study is to provide extra care for cancer patients to improve their well-being and help them cope more easily with the chemotherapy treatment, whereas usual haptotherapy treatment is more therapeutical in the sense that it is more confronting in nature.

The first session started with a brief introduction to haptotherapy and a preliminary interview with the patients. In this interview the therapist asked the patients what goals they would like to achieve through the treatment. After that, patients were requested to lie down on the treatment table in a comfortable position. The therapist then tried to bring the patients in contact with their bodies and feelings via the means of touching. Which exact techniques the therapists used depended on the information they gathered during the interview and from the patients' reactions to being touched. By means of touch, patients learned to focus their attention to particular parts of their bodies and become aware of their feelings. If the patients so wished, the treatment became more like a relaxing massage. Which parts of the body were touched during the session depended on the needs of the patients. The treatment often involved the back, the legs, the feet, the belly, the neck and the shoulders. Through the contact most patients opened up emotionally and began to speak more freely. Although conversation is an important part of the treatment, the needs of the patients in this respect were followed. Conversation and physical contact are both part of the treatment and cannot be viewed separately.

The subsequent four sessions had the same design. The starting point of the treatment were the capabilities and

needs of the patients, the goal was the improvement of the patients' contact with their body and emotions.

2.3. Measures

Considering there is no insight into the effects of haptotherapy so far, preference was given to a questionnaire which measured a broad scale of physical, emotional and psychological aspects of well-being of the patients (see Table 1). As much as possible, use has been made of existing questionnaires, of which the validity and reliability has already been proven in studies by the Helen Dowling Institute into the effects of psychological counseling for people with cancer [18]. Measures were taken of general quality of life [18], dimensions of quality of life as discerned by the EORTC [21], mood [22], meaning in life [18], general functioning [23], physical and psychological symptoms [24], sleep quality [20] and body awareness [19].

The same questionnaire was used in the post-test. For the intervention group, questions measuring the satisfaction with the haptotherapy care, adopted from the evaluation of psychosocial care by the Helen Dowling Institute (HDI) [18] were added. The control group patients were asked if they had made use of any form of complementary care during treatment.

Table 1
The questionnaires used

	Number of questions	Cronbach's alpha
(1) Quality of life VAS [18]	1	NA
(2) Quality of life EORTC QLO-C30 [21]	34	
Physical functioning	5	0.57
Role functioning	2	0.69
Emotional functioning	4	0.79
Cognitive functioning	2	0.65
Social functioning	2	0.64
General quality of life	2	0.76
Dyspnoea	1	NA
Pain	2	0.80
Fatigue	3	0.86
Insomnia	1	NA
Loss of appetite	1	NA
Nausea and vomiting	2	0.79
Constipation	1	NA
Diarrhea	1	NA
(3) Mood disturbance POMS [22]	32	0.94
(4) Meaning in life HDI [18]	4	0.62
(5) General functioning HDI [23]	24	
Positive	15	0.81
Negative	9	0.74
(6) Symptoms RSCL [24]	11	0.73
(7) Sleep quality [20]	5	0.82
(8) Body awareness [19]	6	0.74
(9) Satisfaction with care [18]	8	0.92

NA, not applicable because the scale consists of only one question.

2.4. Statistical analyses

To compare the intervention group and the control group Chi-squared tests, Mann–Whitney *U*-tests and *t*-tests were used, depending on the level of measurement. In order to test the effects of the haptotherapy treatments on the dependent variables, linear regression analysis was used, provided that the assumptions were not violated. To check the assumptions normality, homoscedasticity, plots, linearity and multicollinearity were evaluated. Cook's distances were calculated to detect possible outliers. When the assumptions for linear regression analysis were not met, testing was done by using logistic regression analysis. To that end, the result variables were dichotomized using the median as the cut-off point. Multicollinearity and Cook's distances were also calculated. Dummy variables were created for the variables 'intervention' (intervention = 1, control = 0) and 'children living at home' (1 = yes; 0 = no). Both dummy variables, the period between pre- and post-test, and the score on the pre-test were entered as predictors in the regression model. The variable 'period' was chosen because the effect of the intervention could have been influenced by the length of the period of time between the pre- and post-test. All statistical analyses have been carried out using SPSS for Windows 11.0. Testing was done with an α of 0.05 (two-sided testing).

3. Results

From the analysis, it appeared that the reliability of the subscales in the questionnaire was adequate (Cronbach's α higher than 0.60), except for the subscale 'physical functioning' of the EORTC-QLQC30 (Cronbach's $\alpha = 0.57$), see Table 1.

Table 2
Data collection and dropout

	Total	Intervention group	Control group
Data collection			
Inclusion	90	55 (61%)	35 (39%)
Exclusion	4 (4%)	1 (2%)	3 (9%)
Loss of data	6 (7%)	2 (4%)	4 (11%)
Dropout	23 (26%)	21 (38%)	2 (6%)
Study group	57 (63%)	31 (56%)	26 (74%)
Reasons for dropout			
Too ill	2	1	1
Chemotherapy stopped	1	0	1
Passed away	6	6	0
To another hospital	2	2	0
No intervention effect	1	1	NA
Unknown	9	9	0
Other	2	2	0

NA, not applicable.

3.1. Response

The results of the recruitment and the dropout are presented in Table 2. In total 90 patients were included in the research. Of them, 35 (39%) belonged to the control group and 55 (61%) to the intervention group. Three control patients were excluded because they had used of a form of complementary care similar to haptotherapy. One patient from the intervention group was excluded because she was undergoing chemotherapy for the second time. Two patients from the control group dropped out, and 21 from the intervention group did (see Table 2). From the medical records of four of the nine patients for whom the reason for dropping out is unknown, it appeared they had made positive statements about the haptotherapy treatment. The pre- or post-test of four control and two intervention patients was lost in the mail. As a result, the final study group consisted of 31 intervention patients and 26 controls.

3.2. Dropout analysis

Because of the high dropout rate in the intervention group, a dropout analysis of all available data has been carried out [25]. The dropout and the non-dropout group differed from each other on four variables. There were significantly more palliative patients (62%) in the group of patients that dropped out, than in the group of patients that did not drop out (29%). This finding is supported by the fact that six patients in the intervention group passed away during the study. It was also found that the dropout group used more sleeping pills than the group that completed the research (50 and 21%, respectively). Furthermore, the group that dropped out was less troubled by dyspnoea than the group that did not drop out (respective averages 12.7 and 28.9). Finally, the dropout group was less likely to expect that the haptotherapy sessions would help them to endure their chemotherapy treatment better than the group that did not drop out (respectively, 33 and 68%).

3.3. Background characteristics

In Table 3, demographic and medical characteristics are presented. The subjects are predominantly women with breast cancer, which explains the relatively low average age (54.0 and 52.7 years for the intervention and control group, respectively) of this group of cancer patients. The only difference between the intervention and control group is that relatively more patients in the intervention group have children living at home. With regard to the other demographic and medical characteristics the groups do not differ.

Table 3
Demographic and medical characteristics of the patients

	Intervention ($N = 31$)		Control ($N = 26$)	
	N	%	*N*	%
Demographic characteristics				
Sex				
Woman	25	80.6	19	73.1
Man	6	19.4	7	26.9
Age				
Mean	54.0		52.7	
≤50 years	13	41.9	12	46.1
51 t/m 60 years	7	22.6	8	30.8
>60 years	11	35.5	6	23.1
If children ($n = 40$)				
Living at home[a]	6	27.3	10	50
Civil status				
Single	6	19.4	2	7.7
Married/living together	25	80.6	24	92.3
SES (sum score of education level and professional level [26])				
Low (1–4)	9	29.0	4	15.4
Average (5–8)	15	48.4	12	46.1
High (9–12)	7	22.6	10	38.5
Medical characteristics				
Diagnosis[b]				
Breast cancer	13	41.9	15	57.7
Intestinal cancer	7	22.6	7	26.9
Other	11	35.5	4	15.4
Prognosis				
Adjuvant	21	67.7	19	73.1
Curative	1	3.2	1	3.8
Palliative	9	29.0	6	23.1
Metastasizes				
Yes	19	61.3	15	57.7
No	12	38.7	11	42.3
Type of chemotherapy				
AC	13	41.9	13	50.0
5FU/leucovorin	8	25.8	5	19.2
Other	10	32.3	8	30.8
Use of medicines				
No	4	12.9	8	30.8
Painkillers	12	38.7	15	57.7
Tranquilizers	3	9.7	2	7.7
Sedatives	6	19.4	3	11.6
Against nausea	8	25.8	3	11.6

[a] Significance ($p < 0.05$; Chi squared-test).
[b] More than one treatment possible.

3.4. Intervention evaluation

Patients evaluated the haptotherapy sessions very positively. The eight questions on the quality of the support and satisfaction were answered with an average score of 28.8 (found range of 15–32; possible range of 8–32). There were hardly any negative evaluations. The average evaluation score awarded was 8.4 (found range 6–10; possible range 1–10). A score of 6 was awarded in only two occasions.

3.5. Changes in well-being

First, changes between the pre- and post-test have been analyzed for the intervention and control group separately. It

Table 4
Difference between pre- and post-measures of the intervention and control group

Dimensions of well-being	Mean (S.D.) intervention group		Mean (S.D.) control group	
	Pre	Post	Pre	Post
(1) Quality of life (VAS)	6.30 (2.52)	7.00 (1.51)	7.15 (1.62)	5.73 (2.38)
(2) Quality of life (EORTC)				
Physical functioning	60.00 (22.89)	65.00 (20.45)	78.46 (15.92)	72.31 (25.35)
Role functioning	47.22 (28.73)	60.22 (28.44)	56.41 (30.21)	58.97 (30.99)
Emotional functioning	64.78 (24.32)	77.06 (19.42)	75.32 (18.93)	78.21 (19.16)
Cognitive functioning	73.66 (23.08)	76.34 (19.14)	85.90 (20.92)	69.23 (28.16)
Social functioning	65.05 (26.65)	77.42 (22.17)	76.92 (25.42)	71.15 (25.19)
General quality of life	60.22 (19.33)	64.25 (16.13)	69.55 (22.48)	60.90 (20.92)
Feeling oppressed	28.89 (29.99)	19.35 (24.00)	3.85 (10.86)	16.67 (28.67)
Pain	31.67 (28.48)	15.00 (20.22)	30.77 (26.12)	14.10 (20.38)
Fatigue	52.78 (26.98)	46.30 (18.93)	30.77 (24.61)	47.01 (29.70)
Sleeping disorder	42.22 (33.83)	25.48 (29.73)	21.79 (26.57)	20.51 (21.24)
Loss of appetite	26.67 (34.35)	10.75 (18.03)	5.13 (15.47)	11.54 (26.57)
Nausea and vomiting	16.11 (22.09)	23.12 (26.76)	13.46 (25.39)	21.15 (27.71)
Constipation	10.00 (23.41)	18.28 (29.61)	14.10 (28.55)	23.08 (27.92)
Diarrhea	17.20 (28.38)	12.90 (23.85)	7.69 (17.15)	10.26 (18.30)
(3) Mood disturbance (POMS)				
Depression	5.35 (6.37)	3.44 (5.08)[a]	3.50 (3.71)	3.69 (6.03)
Anger	2.90 (5.03)	3.03 (5.49)	1.65 (2.64)	2.88 (4.37)
Fatigue	7.29 (5.37)	7.19 (5.07)	3.88 (5.36)	7.04 (6.97)[a]
Stress	7.23 (6.37)	4.73 (4.48)[a]	5.85 (4.15)	3.77 (4.38)[a]
Strength	8.71 (4.07)	9.23 (4.30)	11.12 (3.53)	9.50 (4.63)
Disturbance total	34.06 (21.39)	29.16 (17.22)	23.77 (13.40)	27.88 (22.80)
(4) Meaning of life (HDI)	12.33 (1.94)	12.26 (2.32)	12.85 (1.59)	12.18 (3.26)
(5) Body awareness (Baardman)	24.50 (3.87)	24.35 (4.14)	25.88 (3.10)	24.87 (2.69)[a]
(6) General functioning (HDI)				
Positive	65.06 (10.75)	65.04 (10.29)	69.00 (9.75)	64.65 (12.57)
Negative	24.90 (7.52)	22.50 (6.88)[a]	21.85 (6.23)	20.38 (6.51)
(7) Symptoms (RSCL)	20.43 (4.55)	18.70 (3.75)[a]	17.27 (3.48)	19.12 (5.21)
(8) Sleep quality (Cox)	13.41 (2.69)	13.50 (2.75)	15.58 (2.94)	15.19 (3.39)

[a] Wilcoxon Signed Ranks test $p \leq 0.05$.

was found that the intervention group improved significantly on the EORTC variables 'role functioning', 'emotional functioning', 'social functioning', 'anxiety', 'pain' and 'loss of appetite', the POMS variables 'depression' en 'stress', and the variables 'general negative functioning' and 'physical and psychological symptoms' (see Table 4). None of the variables showed deterioration.

In the control group improvements were found in the EORTC variable 'pain' and the POMS variable 'stress', both of which also improved in the intervention group. Deterioration was found, however, for the variables 'quality of life' measured by the VAS, 'cognitive functioning', 'general quality of life', 'anxiety' and 'fatigue' from the EORTC QLQ-C30, 'fatigue' from the POMS and 'body awareness'. The variables 'dysponoea' and 'physical and psychological symptoms' showed an improvement in the intervention group, while these variables showed a deterioration in the control group.

The regression analysis showed that the pre-test score contributed significantly to the prediction of all of the dependent variables in Table 5. The variables 'children living at home' and 'period' did not predict the post-test scores. The intervention contributed significantly to the prediction of social functioning, but to none of the other dependent variables. Considering the R^2 values (ranging from 0.17 to 0.57) the variance in most dependent variables can only be attributed to the variables 'intervention' and 'pre-test' to a limited extent.

With regard to the logistic regression analysis, Table 6 shows that the intervention significantly contributed to the prediction of the post-test score on the dependent variables 'quality of life' (VAS) and 'cognitive functioning' from the EORTC. It appears from the values of the odds ratio (OR) that the intervention group has odds 6.26 times higher than the control group of achieving a high score in the post-test on the VAS for quality of life. For the variable 'cognitive functioning' an OR of 5.18 applies for the intervention group in relation to the control group.

For all the remaining dependent variables the reliability interval for the variable 'intervention' included the score 1. This means that it is not clear if the intervention group did better or worse than the control group. However, when we examine the differences between the pre- and post-test (see Table 4), it appears that the intervention group shows an

Table 5
Results of the linear regression analysis for the dependent variables

Dimensions of well-being	β	t-Value	R^b	F-change
(1) Quality of life				
Physical functioning				
Intervention	0.06	0.42	0.24	8.20[c]
Pre-test score	0.51	3.82[a]		
Role functioning				
Intervention	0.10	0.80	0.23	8.10[c]
Pre-test score	0.49	4.02[a]		
Emotional functioning				
Intervention	0.12	1.10	0.39	16.96[c]
Pre-test score	0.64	5.82[a]		
Social functioning				
Intervention	0.26	2.20[b]	0.30	11.71[c]
Pre-test score	0.55	4.69[a]		
General quality of life				
Intervention	0.22	1.88	0.32	12.41[c]
Pre-test score	0.57	4.92[a]		
(2) Mood				
Fatigue				
Intervention	−0.12	0.93	0.17	5.62[c]
Pre-test score	0.44	3.35[a]		
Strength				
Intervention	0.13	1.01	0.24	8.64[c]
Pre-test score	0.52	4.15[a]		
(3) Body awareness				
Intervention	0.08	0.81	0.57	33.28[c]
Pre-test score	0.77	8.12[a]		
(4) General functioning				
Positive				
Intervention	0.10	0.78	0.19	5.79[c]
Pre-test score	0.44	3.40[a]		
Negative				
Intervention	0.05	0.39	0.27	9.53[c]
Pre-test score	0.51	4.16[a]		
(5) Symptoms				
Intervention	−0.21	−1.57	0.18	5.68[c]
Pre-test score	0.45	3.35[a]		
(6) Sleep quality				
Intervention	−0.02	−0.20	0.48	23.66[c]
Pre-test score	0.68	6.33[a]		

[a] $p < 0.01$ (β).
[b] $p < 0.05$ (β).
[c] $p < 0.001$ (F-change).

improvement in ten variables and no decline in any variable while the control group shows an improvement in only two variables and a decline in nine variables.

4. Discussion and conclusion

4.1. Discussion

The haptotherapy treatment offered was highly valued by the patients. The level of satisfaction in this study is higher than that measured in studies on psychosocial care and creative therapies for people with cancer [18,27,28]. To what extent social desirability accounted for the high satisfaction scores is not known. However, the risk of bias due to social desirability was reduced by collecting the questionnaires by the nurses rather than the haptotherapists. Furthermore, it is known from studies among patients with cancer that the satisfaction measures used, do not correlate with the social desirability measure [28] applied.

In the intervention group a large number of patients dropped out (38%). There are, however, no indications that the dropout was systematically caused by the patients not being content with the haptotherapy treatment. Of the nine patients for which the reason for dropout is not known four had made positive statements about the haptotherapy treatment. Only one patient explicitly stated that the lack of effect of the haptotherapy treatment was the reason to quit the intervention. Furthermore, from the dropout analysis it appeared that the dropouts' condition was worse on several variables. This may largely explain why they dropped out.

Haptotherapy showed to significantly improve the perceived social and cognitive functioning of patients as well as their perceived general quality of life. More important than the statistical significance, however, it is relevant to consider the clinical implications of the findings. The OR of the intervention group in relation to the control group for the VAS for quality of life is 6.26 (reliability interval 1.70–23.02), which is very high. This may indicate a clinically relevant effect. The same applies to the OR for the variable 'cognitive functioning', which is 5.18 (reliability interval 1.07–23.02). A similar conclusion can be drawn for the measure of general quality of life from the EORTC QLQC30. The B for this measure is 7.95. This indicates that the intervention group has improved almost 8% compared to the control group. The value of B for 'social functioning' is 12.0, an improvement of the intervention group compared to the control group of 12%. However, these results should be considered with some reservation, because of the high dropout rate in this study.

The indicated effects relate to the short term. In order to measure the effects over a longer period, the post-test would have to be repeated one month or longer after the last treatment. In order to measure the short term effects on the stress and pain experienced, a simple measure such as a VAS would have to be completed directly before and after each session.

A possible consequence of the small sample size is that a true effect could not be proven for the measures used. The statistical power in the linear regression analysis was at least 0.80 for most of the dependent variables, but much lower (0.42) in the logistic regression analysis. Research with larger groups of patients with one type of cancer undergoing the same chemotherapy treatment could further confirm the clinical relevance of the results.

In this study, no effects were found on mood, body awareness, sleep quality and several dimensions of quality of

Table 6
Results of logistic regression analysis for dependent variables

Dimensions of well-being	V.I.M.[a]	B	S.E.	Wald	p-Value	OR	CI
(1) Quality of life VAS	Intervention	1.83	0.66	7.62	0.01[b]	6.26	1.70–23.02
	Pre-measure	0.38	0.16	5.92	0.02	1.47	1.08–1.99
(2) EORTC							
Physical functioning	Intervention	0.11	0.75	0.02	0.89	1.11	0.26–4.80
	Pre-measure	0.09	0.03	11.33	0.00	1.09	1.04–1.14
	Children at home	−1.59	0.78	4.20	0.04	0.20	0.04–0.93
Cognitive functioning	Intervention	1.64	0.81	4.16	0.04[b]	5.18	1.07–25.12
	Pre-measure	0.10	0.03	11.89	0.00	1.10	1.04–1.16
Feeling oppressed	Intervention	−0.37	0.70	0.28	0.60	0.69	0.18–2.72
	Pre-measure	0.04	0.01	6.34	0.01	1.04	1.01–1.07
Pain	Intervention	0.20	0.55	0.14	0.71	1.22	0.42–3.57
Fatigue	Intervention	−0.66	0.68	0.94	0.33	0.52	0.14–1.97
	Pre-measure	0.03	0.01	6.62	0.01	1.03	1.01–1.06
Sleep disturbance	Intervention	0.26	0.67	0.15	0.70	1.29	0.35–4.77
	Pre-measure	0.05	0.02	9.80	0.00	1.05	1.02–1.108
Loss of appetite	Intervention	1.03	0.73	2.01	0.16	2.81	0.67–11.75
	Children at home	−1.44	0.72	4.00	0.05	0.24	0.06–0.97
Nausea and vomiting	Intervention	0.58	0.56	1.08	0.30	1.79	0.60–5.38
Constipation	Intervention	−0.59	0.55	1.14	0.29	0.56	0.19–1.63
Diarrhea	Intervention	−0.23	0.64	0.13	0.72	0.79	0.23–2.80
	Period	0.11	0.05	4.65	0.03	1.12	1.01–1.23
(3) Mood disturbance (POMS)							
Depression	Intervention	−0.12	0.59	0.04	0.83	0.88	0.28–2.82
	Pre-measure	0.18	0.07	7.17	0.01	1.20	1.05–1.37
Anger[b]	Intervention	−0.37	0.64	0.35	0.56	0.69	0.20–2.40
	Pre-measure	0.43	0.20	4.58	0.03	1.54	1.04–2.29
	Children at home	−1.33	0.69	3.74	0.05	0.27	0.07–1.02
Stress	Intervention	0.16	0.58	0.08	0.78	1.18	0.38–3.68
	Pre-measure	0.17	0.07	6.57	0.01	1.19	1.04–1.36
Mood disturbance total	Intervention	0.02	0.62	0.00	0.98	1.02	0.30–3.45
	Pre-measure	0.09	0.03	9.65	0.00	1.09	1.03–1.15
(4) Meaning of life	Intervention	−0.58	0.54	1.14	0.29	0.56	0.19–1.62

[a] Variables in the model. These are the variables, being part of the model, and always, except the variables 'intervention', with a significant contribution to the prediction of the dependent variables.
[b] One case with Cook's distance of 1.16 removed, and the analysis repeated. This had no consequentions for the results.

life. For the effects on mood, this differs from earlier studies on the effects of massage, in which a decrease of fear and depression were found [5]. However, Ahles et al. [29] found that massage had no effect on mood measured by the shortened POMS. A possible explanation for the not forthcoming effects on mood and body awareness, is that both the control group and the intervention group had high scores on these variables. Furthermore, the haptotherapy sessions were spread over the period of chemotherapy treatment according to the wishes of the patients. As a result, the period between the sessions varied considerably. In standard haptotherapy treatment, sessions are generally given weekly. It is likely that the effects of haptotherapy do not last if too much time passes between sessions. On the other hand, it is important to note that haptotherapy is not the same as massage. A Dutch study about the effects of relaxing facial massage indicated that this intervention had no significant impact on the same quality of life measures as measured in this study of palliatively treated patients with cancer at an in-patient hospital ward [30]. This seems to indicate that haptotherapy is more effective. However, Cassileth and Vickers [31] showed that several types of massage (Swedish, foot massage and light touch massage) reduced a variety of symptoms (pain, fatigue, anxiety, nausea and depression) of a mixed group of in- and outpatients with cancer, with foot massage as less effective treatment. We conclude that it would be important to compare the effects of several types of massage for different patient groups.

The study had a non-randomized design as haptotherapy was offered to all the patients, and the control patients were recruted from three different hospitals. A randomized design within the same hospital would have been preferable.

However, comparison analysis showed that the matching was successful for nearly all the variables. Although the period between pre- and post-test was sometimes longer than the norm of 13 weeks, the omission of these outliers in the data did not lead to different findings. On the other hand, the non-randomized design may have contributed to selection bias, as patients in the intervention group all wanted to receive the hapthotherapy treatment, while control patients were not given this choice.

4.2. Conclusion

It can be concluded that haptotherapy contributed to the well-being of the patients and as it was expected did not lead to any negative effects on their quality of life. In other words, there is no risk in offering haptotherapy to patients with cancer who receive chemotherapy treatment at day clinics. This form of complementary care is highly valued by the patients with cancer and benefits their quality of life.

4.3. Practice implications

Haptotherapy as a form of complementary care is a potentially valuable and effective intervention to improve the well-being of patients with cancer undergoing invasive treatment.

References

[1] Jordan ML, Delunas LR. Quality of life and patterns of nontraditional therapy use by patients with cancer. Oncol Nurs Forum 2001;28:1107–13.

[2] Lee MM, Lin SS, Wrensch MR, Adler SR, Eisenberg D. Alternative therapies used by women with breast cancer in four ethnic populations. J Nat Cancer Inst 2002;92:42–7.

[3] Ernst E, Cassileth BR. The prevalence of complementary/alternative medicine in cancer: a systematic review. Cancer 1998;83:777–82.

[4] Dam FSAM van. Houtsmuller is in Moerman is uit: een onderzoek naar het gebruik van alternatieve diëten en andere alternatieve behandelingen door kankerpatiënten in (use of alternative care by Dutch cancer patients). Nederl Tijdschr Geneesk 1999;143:1421–4.

[5] Visser AP, Busch M, Wysmans M. Pleidooi voor implementatie, opleiding, voorlichting en onderzoek op het terrein van complementaire zorg (Plea for complementary care in the Netherlands). Tijdschr Gezondh Wetensch 2005;83:381–4.

[6] McCorkle R. Effects of touch on seriously ill patients. Nurs Res 1974;23:125–32.

[7] Ferrell-Torry AT, Glick OJ. The use of therapeutic massage as a nursing intervention to modify anxiety and the perception of cancer pain. Cancer Nurs 1993;6:93–101.

[8] Grealish L, Lamasney A, Whiteman B. Foot massage—a nursing intervention to modify the distressing symptoms of pain and nausea in patients hospitalized with cancer. Cancer Nurs 2000;23:237–43.

[9] Stephenson NLN, Weinrich SP, Tavakoli AS. The effects of foot reflexology on anxiety and pain in patients with breast and lung cancer. Oncol Nurs Forum 2000;27:67–72.

[10] Weinrich SP, Weinrich MC. The effect of massage on pain in cancer patients. Appl Nurs Res 1990;3:140–5.

[11] Wilkie DJ, Kampbell J, Cutshall S, Halabisky H, Harmon H, Johnson LP, Weinacht L, Rake-Marona M. Effects of massage on pain intensity, analgesics and quality of life in patients with cancer pain: a pilot study of a randomized clinical trial conducted within hospice care delivery. Hospice J 2000;15:31–53.

[12] Hallissey S. Aromatherapy and massage. In: Barraclough J, editor. Integrated cancer care. Oxford: Oxford University Press; 2001. p. 83–93.

[13] Turton P. Touch me, feel me, heal me. Nurs Times 1989;85:42–4.

[14] Barnett K. A theoretical construct of the concepts of touch as they relate to nursing. Nurs Res 1972;21:102–10.

[15] Wilkinson S, Aldridge J, Salmon I, Cain E, Wilson B. An evaluation of aromatherapy massage in palliative care. Pall Med 1999;13:409–17.

[16] Pollman-Wardenier W, Dijkhuis JJ, Troost T. Verkenningen in de haptonomie (exploration in haptonomy). Utrecht: Bruna; 1993.

[17] www.haptotherapeutenvvh.nl (Dutch website Society for Haptotherapy).

[18] Remie M, Zoeteman M, Visser APh, Garssen B. Ruimte voor jezelf. Evaluatie groepsbegeleiding voor mensen met kanker door het Helen Dowling Instituut (evaluation support groups for cancer patients). Utrecht: Helen Dowling Institute; 2000.

[19] Baardman I, De Jong JG. Het meten van lichaamswaardering (measurement of body perception). Een verslag van het werken met de body-cathexis-schaal van Secord en Jourard. Bewegen en Hulpverlening 1984;1:28–41.

[20] Cox K. Quality of sleep in hospital settings. Maastricht: Rijksuniversiteit Limburg; 1992.

[21] Sprangers MAG, Cull A, Bjordal K, Groenvold M, Aaronson NK. The European Organization for Research and Treatment of Cancer approach to quality of life assessment: guidelines for developing questionnaire modules. Qual Life Res 1993;2:27–295.

[22] Wald FDM, Mellenbergh GJ. Instrumenteel onderzoek; de verkorte versie van de Nederlandse vertaling van de Profile of Mood States (POMS) (short Dutch version of the POMS). Nederl Tijdschr Psychol 1990;45:86–90.

[23] Bruin EJ van, Dijk M van, Duivenvoorden HJ, Garssen B. Assessing adjustment to cancer: the Health and Disease Inventories (H.D.I.). Lisse: Swets & Zeitlinger; 1996.

[24] Haes JCJM de. Kwaliteit van leven van kankerpatiënten (quality of life in cancer patients). Amsterdam/Lisse: Swets & Zeitlinger; 1998.

[25] Berg M van den, Visser A, Borne B van den. Complementaire zorg voor kankerpatiënten die chemokuren volgen: Effectiviteit van Haptotherapie (effectivity of haptotherapy for cancer patients). Utrecht: Helen Dowling Institute; 2003.

[26] Westerlaak JM van, Kropman JA, Collaris JWM. Standard onderzoeksinstrumentarium: ITS Beroepenklapper (measurement of levels of professions). Nijmegen: Instituut voor Toegepaste Sociale Wetenschappen (ITS); 1990.

[27] Visser AP, Op't Hoog M, Taal J. Evaluatie van de cursus Kanker en Beeld (evaluation of creative therapy for cancer patients). Tijdschr Kanker 2005;29:24–7.

[28] Kieviet A, Visser A, Garssen B, Pet A. Changes in well-being after mindfulness training for cancer patients. Utrecht: Helen Dowling Institute; 2005.

[29] Ahles TA, Tope DM, Pinkson B, Walch S, Hann D, Whedon M, Dain B, Weiss JE, Mills L, Silberfarb PM. Massage therapy for patients undergoing autologous bone marrow transplantation. J Pain Symptom Manage 1999;18:157–63.

[30] Schell N, Berg M van den, Visser AP. Effecten van gezichtmassage-ontspanning als complementaire zorgvorm op de kwaliteit van leven van palliatieve kankerpatiënten (effects of relaxing facial massage as complemantary care on the quality of life of palliative treated patients with cancer). Utrecht: Helen Dowling Institute; 2003 .

[31] Cassileth BR, Vickers AJ. Massage therapy for symptom control: outcome study at a major cancer centre. J Pain Symptom Control 2004;28:244–9.