

International Journal of Clinical and Experimental Hypnosis



ISSN: (Print) (Online) Journal homepage: <https://www.tandfonline.com/loi/nhyp20>

A Group Intervention Combining Self-Hypnosis and Self-Care in Oncology: Implementation in Daily Life and Perceived Usefulness

Charlotte Grégoire, Marie-Elisabeth Faymonville, Audrey Vanhaudenhuyse, Guy Jerusalem, Justine Monseur & Isabelle Bragard

To cite this article: Charlotte Grégoire, Marie-Elisabeth Faymonville, Audrey Vanhaudenhuyse, Guy Jerusalem, Justine Monseur & Isabelle Bragard (2023): A Group Intervention Combining Self-Hypnosis and Self-Care in Oncology: Implementation in Daily Life and Perceived Usefulness, International Journal of Clinical and Experimental Hypnosis, DOI: [10.1080/00207144.2023.2249044](https://doi.org/10.1080/00207144.2023.2249044)

To link to this article: <https://doi.org/10.1080/00207144.2023.2249044>



View supplementary material 



Published online: 08 Sep 2023.



Submit your article to this journal 



View related articles 



View Crossmark data 



A Group Intervention Combining Self-Hypnosis and Self-Care in Oncology: Implementation in Daily Life and Perceived Usefulness

Charlotte Grégoire^a, Marie-Elisabeth Faymonville^{a,b}, Audrey Vanhauzenhuysse^{a,c}, Guy Jerusalem^d, Justine Monseur^e, and Isabelle Bragard^f

^aSensation and Perception Research Group, GIGA-Consciousness, University of Liège, Belgium; ^bArsène Burny Cancerology Institute, CHU of Liège, Belgium; ^cInterdisciplinary Algology Centre, CHU of Liège, Belgium; ^dMedical Oncology Department, CHU of Liège and University of Liège, Belgium; ^eBiostatistics Unit, Public Health Department, University of Liège, Belgium; ^fResearch and Continuing Education Department, and CRIG Research Center, Haute Ecole Libre Mosane (HELMo), Liège, Belgium

ABSTRACT

Multicomponent mind-body interventions are increasingly studied in oncology to improve patients' quality of life (QOL). However, the respective usefulness of each of their components or their long-term use by the participants are rarely assessed. In this study, 95 women with different cancer diagnoses participated in a self-hypnosis and self-care group. Different questionnaires were administered before (T1), right after (T2), 3 to 4 months after (T3), and 1 year after (T4) the intervention. After the intervention, 97.5% of the participants regularly practiced any kind of relaxation (vs. 50% at baseline), especially hypnosis. The different components of the intervention (i.e., being in a group, hypnosis exercises during the sessions and at home, self-care tasks, and discussions during the group sessions) were all considered to be very useful ($M = 6.91-7.75/10$). One year after the intervention, the 10 most used techniques were mainly concrete activities to take care of oneself. This intervention seems very relevant for women who had cancer. Our results allow a first reflection about the mechanisms of action of our intervention.

Registration: ClinicalTrials.gov (NCT03144154). Registered on the 1st of May 2017.

ARTICLE HISTORY

Received 6 December 2022

Revised 4 June 2023

Accepted 6 June 2023

KEYWORDS

Cancer; hypnosis; mind-body; oncology; relaxation; self-care

Introduction

In 2020, 19.3 million cases of cancer were diagnosed worldwide. This number is estimated to increase to 28.4 million in 2040 (Sung et al., 2021). During the last decades, more and more patients have been successfully treated for cancer or have been able to live with the disease for several years (Arnold et al., 2019). This leads to new challenges in the psycho-oncology field, as cancer is associated with a variety of long-term, distressing side effects. The presence of one symptom cluster composed of fatigue, emotional distress, sleep difficulties, and pain is particularly well documented among people with cancer (De Rooij et al., 2021; Hammer et al., 2022; Loh et al., 2018). These symptoms have a lot of financial, social, and functional

CONTACT Charlotte Grégoire  ch.gregoire@uliege.be  GIGA Consciousness, University of Liège, Avenue de l'Hôpital, 1 – 4000, Liège, Belgium.

 Supplemental data for this article can be accessed online at <https://doi.org/10.1080/00207144.2023.2249044>

© 2023 International Journal of Clinical and Experimental Hypnosis

consequences, as well as a negative impact on treatment adherence, satisfaction with care, and survival (Achimas-Cadariu et al., 2015; Batty et al., 2017; Baussard et al., 2022; Jones et al., 2016; Lin et al., 2017; Neufeld et al., 2017; Riba et al., 2019; Sung et al., 2021). They can last for years after treatment completion but remain underdiagnosed and undertreated (Baussard et al., 2022; De Vries & Stiefel, 2014; Die Trill, 2013; Riba et al., 2019).

In recent years, patients and health professionals in oncology have shown a growing interest in complementary nonpharmacological approaches, such as mind-body interventions, to relieve these symptoms. Complementary medicine is increasingly used by people with cancer, with an estimated rate of 52% (Keene et al., 2019). Health professionals such as oncology nurses often accompany the patients in these practices, and some studies showed a general positive attitude and high interest of these nurses in the application of complementary medicine in oncology (Gok Metin et al., 2018; Loiselle, 2023; Rojas-Cooley & Grant, 2006, 2009). Mind-body interventions target two interconnected levels: psychological and physical (Sawni & Breuner, 2017), and they allow patients to take control over their health, regain hope, and increase their coping strategies and well-being (Carlson et al., 2017; Elliott et al., 2008; Kristoffersen et al., 2022; Weis et al., 2022). Interventions are generally composed of several sessions. For example, a recent systematic review showed that a hypnosis intervention lasting a minimum of eight sessions could constitute an effective complementary approach to manage chronic pain (Langlois et al., 2022). They also generally involve regular practice to maximize their benefits (Creswell, 2017; Dyer, 2013; Eaton & Hulett, 2019). Thus, participants are often invited to practice on their own, at home, with or without audio recordings, to master the technique and implement it in their daily life. For example, a study recently showed that after eight weekly sessions of another mind-body intervention (based on yoga, consisting of postures, conscious breathing, and deep relaxation) proposed to people with cancer, 74.5% of the participants who received weekly reminders to practice, and 62% of the participants who did not receive such reminders, were still practicing yoga 6 months after the intervention. Practice frequency also partially explained the decrease of emotional fatigue in patients who received reminders, underlining its importance (Zetzel et al., 2021). Mind-body interventions based on hypnosis are increasingly scientifically studied. Hypnosis is considered to be “a state of consciousness involving focused attention and reduced peripheral awareness characterized by an enhanced capacity for response to suggestion” (Elkins et al., 2015, p. 382). It is characterized by four main components: absorption (in an imaginative experience), dissociation (from the environment), suggestibility (to the suggestions made by the therapist) (Spiegel, 1991), and automaticity (involuntary response relevant to the content of a communication intended to be a suggestion) (Weitzenhoffer, 2002). Hypnosis is a procedure where “one person (the subject) is guided by another (the hypnotist) to respond to suggestions for changes in subjective experience, alterations in perception, sensation, emotion, thought or behavior” (Green et al., 2005). Self-hypnosis is considered to be a self-induction of hypnosis through self-generated suggestions, without the help of a therapist or hypnotist (Eason & Parris, 2018). Several studies have shown the benefits of hypnosis or self-hypnosis, used alone or in combination with other techniques, to improve quality of life (QOL) in oncology (Arring et al., 2019; Carlson et al., 2017; Cramer et al., 2015; Montgomery et al., 2017; Spiegel, 1985). We also previously tested a multicomponent group intervention combining self-care and (self-)hypnosis, practiced during the sessions and at home, to improve QOL in oncology (see the *Intervention* section for more details). Compared to cognitive-behavioral therapy, yoga, and a control group, this intervention showed greater positive short- and long-term (i.e.,

9 months) impacts on fatigue and emotional distress among women with breast cancer (Grégoire et al., 2017). These results were confirmed by a randomized-controlled trial among women with different cancers that showed short- and long-term (i.e., 1 year) benefits on fatigue, sleep disturbances, and emotional distress (Grégoire et al., 2020, 2022). However, we still do not know which of its components are perceived as the most useful and which of the techniques taught during the sessions are the most used by the participants 1 year later. To the authors' knowledge, the study of Zetzl et al. (2021) discussed above is the only study to have assessed the long-term implementation of a technique taught during a mind-body intervention (i.e., yoga) proposed to people with cancer. In addition, very few studies have investigated the perceived usefulness and use of the different components of multicomponent interventions, especially mind-body ones, in oncology (Kwekkeboom et al., 2008). Studies generally focus on the impact of such interventions on different patients' related outcomes. For example, a study proposed guided imagery and progressive muscle relaxation to people with cancer to decrease their pain. The results, based on interviews, showed that active involvement in the intervention, guided instructions, distraction allowed by the intervention, as well as different characteristics of the participants were perceived to be useful to increase the benefits of the intervention (Kwekkeboom et al., 2008). However, the implementation of the techniques taught during the intervention was not investigated. Thus, it seems important to further understand how mind-body interventions are implemented in the participants' daily life and their perception of what was useful to improve their QOL. Patients' perceived usefulness of interventions is interesting to consider, as assessed in other studies (Ho et al., 2015; Kapoor et al., 2021; Kargo et al., 2021), as it can contribute to improving the design of interventions, bringing them as close as possible to the patients' needs and wishes.

This paper had two aims. First, we wanted to measure the change in participants' relaxation habits, before (T1) and after the intervention (right after, T2; then 3 to 4 months after, T3). As one of the aims of the intervention was to learn self-hypnosis and as we previously showed that this intervention had an impact on mindfulness abilities (Grégoire, Faymonville, Vanhaudenhuyse, Jerusalem, et al., 2021), we expected that more participants would practice any kind of relaxation after the intervention than before, especially hypnosis. Based on the study of Zetzl et al. (2021), we hypothesized that at least 60% of the sample would still practice hypnosis at T2 and T3. We also expected that they would be able to achieve a better state of relaxation after the intervention. Second, we aimed to investigate which components of the intervention (i.e., being in a group, hypnosis exercises during the sessions, at-home hypnosis exercises with audio recordings, self-care tasks, and the discussions and reflections during the group sessions) were considered the most useful by the participants and which techniques (i.e., hypnosis exercise recordings, and 48 self-care techniques, see Table 1) were the most used 1 year after the intervention. As no previous study has assessed such variables, we did not formulate any specific hypotheses regarding how many participants would still use the techniques taught or regarding which techniques would be the most used. This aim is thus exploratory.

Method

The protocol of the study has already been published (Grégoire, Faymonville, et al., 2018) and provides detailed information about the design, recruitment, and randomization procedures, sample-size calculation, assessments, and intervention. Therefore, we will only summarize these aspects here.

Table 1. Techniques Taught during the Intervention

Concrete activities to take care of ourselves	
1	Pleasing ourselves every day, with small concrete actions.
2	Listening to music.
3	Taking time for ourselves.
4	Doing daily physical activity.
5	Making short-, mid-, then long-term projects.
6	Setting new goals.
7	Setting personal, concrete, positive, and realistic goals associated with observable signs of improvement.
Self-knowledge and support	
8	Listing personal needs.
9	Listing personal qualities and setting a cursor from 0 (totally absent) to 10 (totally present) for each of them reflecting the level of that quality.
10	Paying attention to small successes.
11	Observing ourselves when we help other people and differentiate free help from help for which we wait for an incentive.
12	Identifying the rules that we impose on ourselves.
13	Congratulating ourselves daily.
14	Thinking about our imaginary ideal in our different daily life roles (e.g., parent, child, partner, colleague) and making the list of criteria characterizing these different ideal roles.
15	Setting realistic goals about how we want to be according to our imaginary ideal roles (related to the exercise 14).
16	Paying attention to the balance between the energy put in a task/social activity and the related benefit.
17	Thinking about the roles that we have in our relationships (e.g., psychologist, judge, banker) and stop the roles that are consuming in terms of emotions and energy.
18	Paying attention to the gifts of life regarding our own body, making a list of all well-working part of the body.
19	Listing what is a weight in our life by imagining that we all carry a back bag with all our past heavy situations (i.e., concrete things that are difficult to live).
20	Listing our hobbies and check if they are still in line with our needs.
Organization	
21	Setting priorities in tasks by classifying them regarding their urgency and importance.
22	Doing one thing at a time.
23	Delegating some tasks and accepting that it is done differently.
24	Staying in the present.
25	Adapting our professional activity to our personal needs.
26	Separating professional and private life.
Communication skills and relationships	
27	Improving our language with others (avoiding the use of accusatory “you,” “never,” “always”).
28	Using “to have” rather than “to be” when talking about the sickness or the symptoms (e.g., “I have a disease” rather than “I am sick”).
29	Reformulating our self-depreciating language.
30	Accepting to be answered by “no.”
31	Asking questions only if we accept that the answer can be “yes” or “no.”
32	Strategy to learn to say “no”: when receiving a demand, postponing the answer to take time to balance the pros and cons.
33	Formulating our objectives without negation (to avoid suggesting something negative).
34	Finding the good moment for myself and for the other person to talk about important things.
35	Not using the disease as a shield, or an excuse for a difficulty we encounter, avoiding victimization
36	Filling our « self-esteem » barrel by suppressing all negative sentences to ourselves (linked to the exercise 29).
37	Being coherent between what we say and what we do.
38	Avoiding generalizations in relationships and realizing that everybody has qualities.
39	Frequenting people that make us feel good.
Concrete coping strategies to deal with difficult situations	
40	Thinking about our power to change or not a situation. If yes, act to modify the unpleasant situation, if not, have the wisdom to accept it.
41	Identifying the situations that make us angry and preparing alternative responses.
42	Thinking about the fact that everything is a choice, even an “non-choice” and that non-choice is worse than choice.
43	Writing our ruminations and putting them in a jar each time it appears.
44	Considering a situation with pink then black glasses (i.e., focus on all its positive and negative aspects). Then, considering it with transparent glasses and take a step back from it.
45	Identifying our « magic thoughts » (e.g., “If I do not do this, something bad will happen”) and trying not to follow them once, then more regularly.
46	Sorting out what is a weight in our life and letting go what can be (linked to the exercise 19).
47	Using an object associated with a “stop” signal when we have catastrophizing ruminations about the future.
48	Time does not care about us: we cannot increase or decrease the time we have in a day, we do not lose or gain time, so it is not useful to overload ourselves with too much to do in a day.

Design

We used a longitudinal randomized wait-list controlled trial design (see [Figure 1](#)). Participants were randomized into two groups: the first group received immediate intervention (intervention group) and the second group received it (at the latest) 4 months later (wait-list control group; WLCG).

Participants

Patients were mainly recruited in the University Hospital of Liège (November 2016 to March 2019), through posters and flyers displayed in the oncology waiting and consultation rooms. Some oncologists and nurses also directly proposed participation in the study to their patients. Some patients were also recruited outside our hospital and learned about our study on social networks or by word of mouth. The inclusion criteria (checked during the screening, T0) were to be at least 18 years old, fluent in French, with evidence of a non-metastatic invasive cancer, have completed active treatments within the last year, and be experiencing difficulties regarding physical fatigue, moral fatigue, depression, anxiety, fear of recurrence, or ruminations (score of at least four on one of the six symptoms, scored on a visual analogue scale, VAS, ranging from 0 to 10).

Intervention

The intervention combining self-care and (self-)hypnosis was composed of eight weekly 2-hour sessions in a group of eight participants. It was developed and led by one of the authors (MEF), who is an anesthetist and an international expert in hypnosis. She has led self-care/(self-)hypnosis groups since 2008 for chronic pain patients and since 2013 for patients with cancer (Faymonville et al., 2010). Self-care learning is an intervention based on cognitive-behavioral therapy and acceptance and commitment therapy (Hayes et al., 2012), fostering decision-making through different specific tasks focusing on well-being rather than on the disease itself. It encourages the patient to be an actor rather than an observer of their life condition (Bicego et al., 2021). It is also based on patient empowerment and self-management

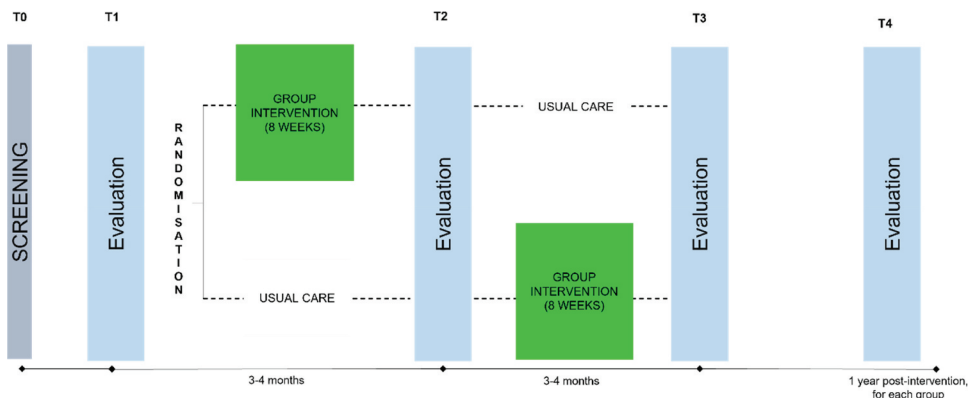


Figure 1. Study Design

approaches whose goals are to strengthen self-esteem, assertion, and self-confidence. Participants had to complete different self-care tasks (see [Table 1](#)) at home between sessions and keep a work-related diary to report how they managed it in their daily life. The tasks were illustrated with metaphors and humorous anecdotes and presented in a practical and didactic way. They were linked to the themes discussed during the sessions, such as self-expectations, self-esteem, self-narrative, social roles, personal boundaries and needs, assertiveness, coping strategies, rumination management, etc. During the group sessions, patients were encouraged to observe their thoughts and actions, and the different tasks proposed helped them to detect and react to difficult situations. In this way, they learnt to implement concrete changes to better respect themselves and others. They also learnt to focus their attention on positive things, life events that are going well, and to be grateful for “being alive.” Interactions with and between patients were encouraged throughout the sessions to foster a therapeutic alliance and positive relationships between participants (Vanhaudenhuyse et al., 2015, 2017). Obviously, participants were asked to be actively involved in the process since the aim was to introduce change in their daily routines. Concerning hypnosis, most of the first session was devoted to answering the participants’ questions and giving information about hypnosis. At the end of each session, a 15-minute hypnosis exercise was conducted under the therapist’s supervision (see Supplementary Material for the verbatims). Participants then received a CD and mp3 audio-recordings for each exercise and were encouraged to practice at home. This regular practice of self-hypnosis is essential to take full advantage of hypnosis without the help of a therapist. Hypnosis, through its impact on different brain structures, is expected to influence cognition and emotional regulation and therefore facilitate the completion of the assigned tasks (Charland-Verville et al., 2017). In this way, self-hypnosis is complementary to the self-care tasks.

We distinguished five main components of the intervention: the fact of being in a group, the hypnosis exercises during the sessions, at-home hypnosis exercises with the recordings, the self-care tasks, and discussions and reflections during the group sessions. Forty-nine techniques were also derived from the tasks and exercises proposed to the participants. The first technique is labeled “hypnosis exercise recordings,” and the remaining 48 techniques are divided into five categories (see [Table 1](#)). During the whole study duration, every participant in each group benefited from usual care, including medical care, oncological rehabilitation, and individual psychological help if necessary. No adverse events of this intervention have been reported in our studies (Grégoire et al., 2017, 2020, 2022; Vanhaudenhuyse & Faymonville, 2015; Vanhaudenhuyse et al., 2015). Any reason for drop-out has been recorded.

Assessments

We extracted data from three questionnaires, designed by our team for this study. Note: the questionnaires were not all proposed at the same measurement times, as detailed below and in the protocol (Grégoire, Faymonville, et al., 2018):

Questionnaire about relaxation habits (including new techniques learned, but not only these) (T1-T2-T3), composed of:

- One “yes/no” question: “*Do you practice relaxation exercises?*” If the participant answers “no,” they do not have to answer the following questions of this questionnaire.
- One list of different relaxation exercises (i.e., breathing exercises, exercises involving pleasant images or sensations, progressive muscular relaxation, hypnosis, sophrology, biofeedback, meditation, mindfulness, yoga, tai chi, qi gong, massage, or other to be specified). For each one, the participant must indicate if they practice the exercise or not (“yes/no”).
- Several questions about the characteristics of their relaxation practice:
 - Format of the practice (i.e., “alone,” “in group,” “both”)
 - Frequency (i.e., “every day,” “a few times a week,” “a few times a month,” “a few times a year”).
 - Moment (i.e., “I have a time slot to practice the exercises,” “I practice the exercises when I need to,” “I practice the exercises when I have time”).
 - Use of relaxation audio recordings (i.e., exercises done “mostly with audio recordings,” “mostly without audio recordings,” “with and without audio recordings”).
 - Duration of the exercises in minutes.
 - Quality of relaxation during the exercises (i.e., “excellent,” “good,” “low,” “absent”).

Questionnaire about the usefulness of the five intervention components, and the use of the 49 techniques (T4 only), composed of:

- Five VAS, from 0 (“it did not help me at all”) to 10 (“it helped me a lot”) about different components of the intervention (i.e., being in a group, hypnosis exercises during the sessions, at-home hypnosis exercises with the recordings, self-care tasks, and discussions and reflections during the group sessions).
- A list of 49 concrete techniques discussed and implemented during the group sessions and at-home tasks. The different hypnosis exercises were grouped in one item labelled “*hypnosis exercise recordings*”, and the remaining 48 techniques were divided into five categories (see [Table 1](#)). For each technique, participants had to indicate whether they still use it or not (“yes/no”), and how often (i.e., “1 or more time(s) per week,” “1-3 times per month,” “less than once a month”).

Statistical Analyses

All statistical analyses were performed using Statistica 13.3 (TIBCO Software Inc.) and SPSS Statistics 25 (IBM). Screening (T0) and baseline (T1) demographic, medical, and psychological data, as well as baseline relaxation habits were compared between the intervention group and the WLCG to test initial equivalency with Mann-Whitney tests for quantitative variables and chi-square tests for qualitative variables. To explore the change in relaxation habits, an analysis of variance with repeated measures (ANOVA) was used for the continuous variable (duration of the exercises), McNemar tests were used for dichotomous variables, and McNemar-Bowker and Wilcoxon tests were used for categorical and ordinal variables, respectively. Then, to explore the perceived usefulness of each component of the intervention and

the use of each technique taught, descriptive analyses were performed using percentages, medians, and standard deviations (*SD*). These scores were then compared using a Friedman test and post hoc tests (Wilcoxon tests). All tests were performed on the maximum number of available data; missing data were not replaced. All tests were two-tailed and the results were considered to be significant at $p < .05$, except for the post hoc analyses where Bonferroni correction was applied, and results were considered to be significant at $p < .005$.

Results

Sample Description

The flow of participants in the study has been detailed previously (Grégoire et al., 2022). One hundred and four patients with cancer diagnoses were randomized into two groups ($n_{\text{intervention group}} = 52$; $n_{\text{WLCG}} = 52$). Men were excluded from the analyses leading to a baseline sample of 95 women ($n_{\text{intervention group}} = 48$; $n_{\text{WLCG}} = 47$). If we had considered men in our analyses, it would have been difficult to conclude about the impact of the intervention on them, and the sample would not have been homogenous. All the other results from this study have been published considering women only (Grégoire, Faymonville, Vanhaudenhuyse, Charland-Verville et al., 2021; Grégoire, Faymonville, Vanhaudenhuyse, Jerusalem et al., 2021; Grégoire et al., 2020, 2022). T2, T3, and T4 assessments were completed by 84, 77, and 68 women, respectively.

Table 2 displays the demographics and medical data at baseline for the whole sample and the two groups. They were equivalent at baseline for all the variables.

Change in Relaxation Habits

Table 3 details the relaxation practices of both groups at T1, T2, and T3. For the participants who had answered “no” to the first question (i.e., “do you practice relaxation exercises?”), answers to the following questions (i.e., list of different relaxation techniques) were considered to be “no” as well. At baseline (T1), 50% of the intervention group ($n = 24$) and 63.8% of the WLCG ($n = 30$) had a regular practice of relaxation ($p = .174$). More specifically, breathing exercises, exercises involving pleasant images or sensations, and progressive muscular relaxation were the most frequently used relaxation techniques in both groups. Right after the intervention group received the intervention (T2), relaxation practices significantly increased in this group ($p < .001$; 50% vs. 97.5%) while it decreased in the WLCG (which had not yet received the intervention at that time) ($p = .016$; 63.8% vs. 46.8%). At T3 (i.e., 3 to 4 months after the intervention group received the intervention, and right after the WLCG received the intervention), the relaxation practice was still significantly higher compared to T1 in the intervention group ($p < .001$; 50% vs. 89.7%), while it significantly increased in the WLCG ($p = .016$; 63.8% vs. 94.7%; Figure 2). Thus, after each group received the intervention, their practice of any kind of relaxation significantly increased, as well as the specific practice of hypnosis (Figure 3). In the intervention group, hypnosis was the most used relaxation technique right after the intervention (T2; 92.5%), while breathing exercises were the most used (74.4%) and hypnosis the second most used (69.2%) 4 months after the intervention (T3). After the WLCG received the

Table 2. Baseline (T1) Participants' Demographics and Medical Data in Each Group

	Total sample (N = 95)	Intervention group (n = 48)	WLCG (n = 47)	p
Demographics				
Age (years)				
Median (SD)	54 (11.91)	53 (12.54)	56 (10.90)	.068
Range	24–78	24–78	30–78	
Gender, N (%)				
Women	95 (100)	48 (100)	47 (100)	NA
Marital status, N (%)				
Single	6 (6.32)	3 (6.25)	3 (6.38)	.471
Married/living with partner	63 (66.32)	35 (72.92)	28 (59.57)	
Divorced/separated/widowed	15 (15.79)	5 (10.42)	10 (21.28)	
In a relationship but not living together	11 (11.58)	5 (10.42)	6 (12.77)	
Cultural origin, N (%)				
Western Europe	92 (96.84)	45 (93.75)	47 (100)	.082
Eastern Europe	3 (3.16)	3 (6.25)	0 (0.00)	
Education level, N (%)				
Elementary school or less	1 (1.05)	0 (0.00)	1 (2.13)	.794
Lower secondary school	8 (8.42)	3 (6.25)	5 (10.64)	
Upper secondary school	25 (26.32)	14 (29.17)	11 (23.40)	
Bachelor's degree	38 (40.00)	19 (39.58)	19 (40.43)	
Master's degree	20 (21.05)	11 (22.92)	9 (19.15)	
Post-graduate	3 (3.16)	1 (2.08)	2 (4.26)	
Employment status, N (%)				
Employed full time	7 (7.37)	4 (8.33)	3 (6.38)	.490
Employed part time	21 (22.11)	9 (18.75)	12 (25.53)	
Incapacity of work / Invalidity	37 (38.95)	22 (45.83)	15 (31.91)	
Unemployed / Student / Housewife/househusband / Retired / Other	30 (31.58)	13 (27.08)	17 (36.17)	
Patient medical history				
Cancer diagnosis, N (%)				
Breast cancer	75 (78.94)	38 (79.17)	37 (78.72)	.325
Hematological cancer (lymphoma, leukemia)	4 (4.22)	3 (6.25)	1 (2.13)	
Gynecological cancer (cervix, ovaries)	4 (4.22)	3 (6.25)	1 (2.13)	
Skin	2 (2.11)	0 (0.00)	2 (4.26)	
Ear/Nose/Throat	1 (1.05)	0 (0.00)	1 (2.13)	
Digestive (stomach, peritoneum, pancreas)	5 (5.26)	3 (6.25)	2 (4.26)	
Thyroid	2 (2.11)	0 (0.00)	2 (4.26)	
Lung	1 (1.05)	1 (2.08)	0 (0.00)	
Brain	1 (1.05)	0 (0.00)	1 (2.13)	
Time since diagnosis (months)				
Median (SD)	8 (8.69)	8.5 (5.13)	8 (11.25)	.821
Range	1–72	2–24	1–72	
Other chronic health problem, N (%)				
Yes	55 (57.89)	27 (56.25)	28 (59.57)	.743
No	40 (42.11)	21 (43.75)	19 (40.43)	
Consumption of psychotropic during the study, N (%)				
Yes	50 (52.63)	27 (56.25)	23 (48.94)	.475
No	45 (47.37)	21 (43.75)	24 (51.06)	

intervention (T3), breathing exercises were the most used (86.8%), and hypnosis the second most used relaxation techniques (83.8%) in this group.

Table 4 shows the characteristics of the relaxation exercises performed by both groups at each measurement time. The data were analyzed in both groups separately, for participants who had a relaxation practice at T1 and T2 (evolution T1-T2) and/or at T1 and T3 (evolution T1-T3). Relaxation exercises were mostly performed alone by both groups at the three measurement times. Practice frequency significantly increased after

Table 3. Evolution of Relaxation Practice in Both Groups

	Intervention Group					WLCG				
	T1	T2	T3	Evolution	Evolution	T1	T2	T3	Evolution	Evolution
	N (%)	N (%)	N (%)	T1-T2 (n = 40)	T1-T3 (n = 39)	N (%)	N (%)	N (%)	T1-T2 (n = 43)	T1-T3 (n = 38)
				p	p				p	p
<i>Regular relaxation practice</i>										
Yes	24 (50.0)	39 (97.5)	35 (89.7)	<.001	<.001	30 (63.8)	22 (51.2)	36 (94.7)	.016	.016
No	24 (50.0)	1 (2.5)	4 (10.3)			17 (36.2)	21 (48.8)	2 (5.3)		
<i>Relaxation techniques used</i>										
<i>Breathing exercises</i>										
Yes	22 (45.8)	31 (77.5)	29 (74.4)	.004	.001	29 (61.7)	20 (46.5)	33 (86.8)	.008	.125
No	26 (54.2)	9 (22.5)	10 (25.6)			18 (38.3)	23 (53.5)	5 (13.2)		
<i>Exercises involving pleasant images or sensations</i>										
Yes	13 (27.1)	35 (87.5)	25 (64.1)	<.001	.002	21 (44.7)	14 (32.6)	31 (81.6)	.109	.007
No	35 (72.9)	5 (12.5)	14 (35.9)			26 (55.3)	29 (67.4)	7 (18.4)		
<i>Progressive muscular relaxation</i>										
Yes	12 (25.0)	24 (60.0)	22 (56.4)	.001	.002	20 (42.6)	14 (32.6)	26 (68.4)	.125	.065
No	36 (75.0)	16 (40.0)	17 (43.6)			27 (57.4)	29 (67.4)	12 (31.6)		
<i>Hypnosis</i>										
Yes	2 (4.2)	37 (92.5)	27 (69.2)	<.001	<.001	2 (4.3)	1 (2.3)	31 (83.8)	.999	<.001
No	46 (95.8)	3 (7.5)	12 (30.8)			45 (95.7)	42 (97.7)	6 (16.2)		
<i>Sophrology</i>										
Yes	2 (4.2)	1 (2.5)	1 (2.6)	.999	.999	5 (10.6)	2 (4.8)	4 (10.8)	.250	.999
No	46 (95.8)	39 (97.5)	38 (97.4)			42 (89.4)	40 (95.2)	33 (89.2)		
<i>Biofeedback</i>										
Yes	0	1 (2.5)	0	.999	-	0	1 (2.3)	0	.999	-
No	48 (100)	39 (97.5)	39 (100)			47 (100)	42 (97.7)	38 (100)		
<i>Meditation</i>										
Yes	8 (16.7)	9 (22.5)	11 (28.2)	.687	.180	14 (30.4)	14 (32.6)	13 (34.2)	.999	.625
No	40 (83.3)	31 (77.5)	28 (71.8)			32 (69.6)	29 (67.4)	25 (65.8)		
<i>Mindfulness</i>										
Yes	8 (16.7)	6 (15.0)	8 (20.5)	.999	.375	11 (23.4)	10 (23.3)	12 (31.6)	.999	.999
No	40 (83.3)	34 (85.0)	31 (79.5)			36 (76.6)	33 (76.7)	26 (68.4)		
<i>Yoga</i>										
Yes	4 (8.3)	3 (7.5)	2 (5.1)	.999	.999	11 (23.4)	10 (23.3)	9 (23.7)	.999	.625
No	44 (91.7)	36 (90.0)	37 (94.9)			36 (76.6)	33 (76.7)	29 (76.3)		
Missing data	/	1 (2.5)	/							

(Continued)

Table 3. (Continued)

	Intervention Group						WLCG					
	T1			Evolution			T1			Evolution		
	N (%)	N (%)	N (%)	T1-T2	p	T1-T3	N (%)	N (%)	N (%)	T1-T2	p	T1-T3
	(n = 48)	(n = 40)	(n = 39)	(n = 40)		(n = 39)	(n = 47)	(n = 43)	(n = 38)	(n = 43)		(n = 38)
<i>Tai-chi</i>												
Yes	0	0	0	-	-	0	2 (4.3)	2 (4.7)	2 (5.3)	.999		.999
No	48 (100)	40 (100)	39 (100)				45 (95.7)	41 (95.3)	36 (94.7)			
<i>Qi Gong</i>												
Yes	0	0	0	-	-	0	3 (6.4)	3 (7.0)	2 (5.3)	.999		.999
No	48 (100)	40 (100)	39 (100)				44 (93.6)	40 (93.0)	36 (94.7)			
<i>Massage</i>												
Yes	8 (16.7)	10 (25.0)	10 (25.6)	.727	.754	10 (25.6)	13 (27.7)	10 (23.3)	10 (26.3)	.727		.727
No	40 (83.3)	30 (75.0)	29 (74.4)			29 (74.4)	34 (72.3)	33 (76.7)	27 (71.1)			
Missing data	/	/	/			/	/	/	1 (2.6)			
<i>Other</i>												
Yes	4 (8.3)	4 (10)	5 (12.8)	.999	.999	5 (12.8)	2 (4.3)	1 (2.3)	7 (18.4)	.500		.125
No	43 (89.6)	35 (87.5)	34 (87.2)			34 (87.2)	44 (93.6)	42 (97.7)	31 (81.6)			
Missing data	1 (2.1)	1 (2.5)	/			/	1 (2.1)	/	/			

-. p not calculated by the software as one modality of response is not represented (N = 0).

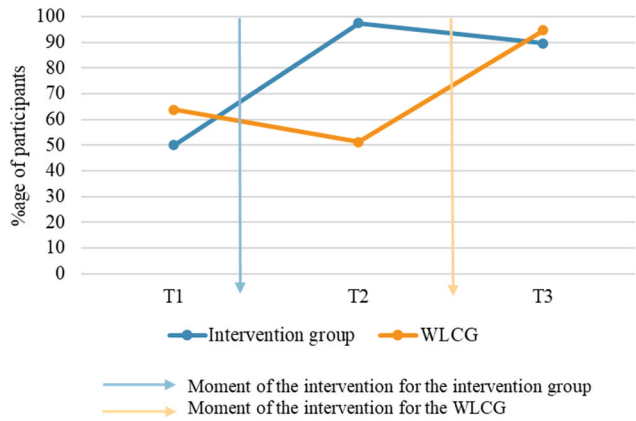


Figure 2. Evolution of the Practice of Any Kind of Relaxation in Both Groups

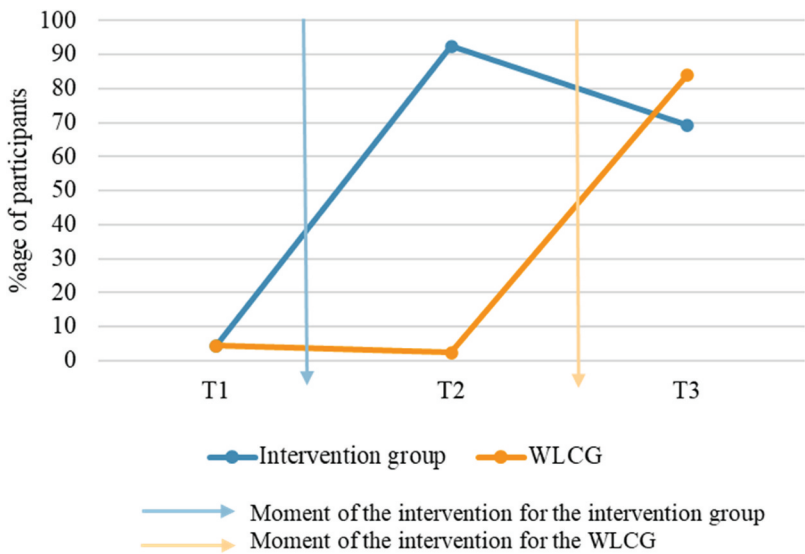


Figure 3. Evolution of the Practice of Hypnosis in Both Groups

the intervention in both groups ($p = .039$ in the intervention group, $p = .002$ in the WLCG; see Figure 4). However, at T3, the frequency of relaxation exercise practice was no longer significantly different from baseline in the intervention group. Audio recordings were also used more often right after the intervention ($p = .026$ in the intervention group, $p = .003$ in the WLCG). No significant change in the moment of practice or quality of the relaxation were reported.

Concerning the duration of the relaxation exercises, no time effect ($p = .238$) nor group-by-time interaction effect ($p = .910$) were revealed, meaning that the change in duration of the exercises was not significantly different at the three measurement times, nor between the groups. Mean duration of each relaxation exercise was 21.37 min ($SD = 17.55$), when considering the whole sample and the three measurement times together.

Table 4. Evolution of the Characteristics of Relaxation Exercises in Both Groups

	Intervention Group					WLCG				
	T1	T2	T3	Evolution	p	T1	T2	T3	Evolution	p
	(n = 21)	(n = 21)	(n = 20)	T1-T2 (n = 21)		(n = 22)	(n = 22)	(n = 29)	T1-T2 (n = 22)	
	n (%)	n (%)	n (%)			n (%)	n (%)	n (%)		
<i>Characteristics of usual practice</i>										
<i>Format</i>										
Alone	19 (90.5)	18 (85.7)	16 (80.0)		.999	13 (59.1)	12 (54.5)	18 (62.1)		.905
In group	0	0	0			1 (4.5)	1 (4.5)	0		
Both	2 (9.5)	3 (14.3)	4 (20.0)			8 (36.4)	9 (40.9)	11 (37.9)		
<i>Frequency</i>										
Every day	3 (14.3)	3 (14.3)	5 (25.0)		.039	1 (4.5)	3 (13.6)	9 (31.0)		.058
A few times a week	6 (28.6)	16 (76.2)	9 (45.0)			12 (54.5)	13 (59.1)	17 (58.6)		
A few times a month	6 (28.6)	2 (9.5)	5 (25.0)			8 (36.4)	6 (27.3)	3 (10.3)		
A few times a year	3 (14.3)	0	1 (5.0)			1 (4.5)	0	0		
<i>Moment of practice</i>										
I have a time slot	1 (4.8)	0	1 (10.0)		-	5 (22.7)	5 (22.7)	3 (10.3)		.430
When I need it	14 (66.7)	14 (66.7)	16 (80.0)			11 (50.0)	6 (27.3)	21 (72.4)		.112
When I have time	6 (28.6)	7 (33.3)	2 (10.0)			6 (27.3)	11 (50.0)	5 (17.2)		
<i>Use of audio recordings</i>										
Mostly with recordings	4 (19.0)	3 (14.3)	4 (20.0)		.026	3 (13.6)	3 (13.6)	4 (13.8)		.223
Mostly without recordings	12 (57.1)	3 (14.3)	6 (30.0)			10 (45.5)	13 (59.1)	3 (10.3)		
With and without recordings	5 (23.8)	15 (71.4)	10 (50.0)			9 (40.9)	6 (27.3)	22 (75.9)		
<i>Quality of relaxation</i>										
Excellent	2 (9.5)	3 (14.3)	1 (5.0)		.180	2 (9.1)	0	8 (27.6)		.257
Good	17 (81.0)	18 (85.7)	17 (85.0)			18 (81.8)	19 (86.4)	20 (69.0)		.052
Low	2 (9.5)	0	2 (10.0)			2 (9.1)	3 (13.6)	1 (3.4)		
Absent	0	0	0			0	0	0		

-: p not calculated by the software as one modality of response is not represented (n = 0).

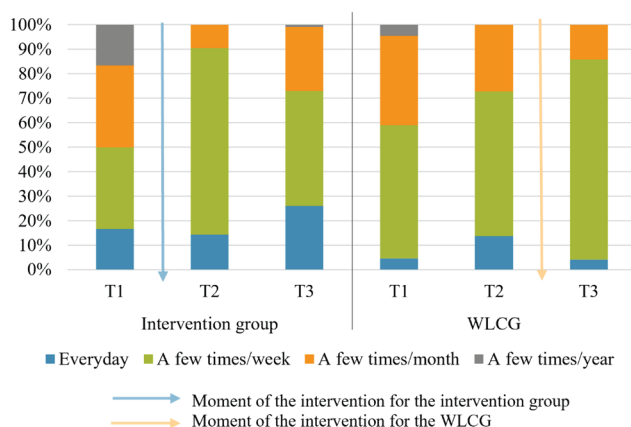


Figure 4. Evolution of the Frequency of Relaxation Practice in Both Groups

Evaluation of the Respective Usefulness of the Components of the Intervention

To evaluate the perceived usefulness of each component of the intervention, assessed 1 year after the group sessions, we considered the whole sample. At that time, both groups had received the intervention and had 1 year to implement it in their daily lives (see Figure 1), making the distinction between an intervention group and a WLCG no longer relevant. First, participants scored the respective usefulness of the five components of the intervention as follows: “being in a group”: $M = 6.91/10$ ($SD = 2.40$); “hypnosis exercises during the sessions”: $M = 7.53/10$ ($SD = 2.11$); “at-home hypnosis exercises with the recordings”: $M = 7.03/10$ ($SD = 2.59$); “self-care tasks”: $M = 7.32/10$ ($SD = 2.31$); and “discussions and reflections during the group sessions”: $M = 7.75/10$ ($SD = 2.11$). These scores were significantly different ($p = .002$). Specifically, there was a significant difference in the perceived usefulness of the discussions and reflections during the group sessions and the fact of being in a group ($p < .001$). Table 5 details the 10 most used techniques among the 49 that were assessed. Concrete activities to take care of ourselves and self-knowledge and support techniques seem to be particularly used by our participants. Note, the hypnosis exercise recordings were not among the 10 most used techniques. Indeed, 1 year after the intervention, they were still used by 44 participants (64.7%).

Discussion

This study is one of the first to investigate the impact of a mind-body intervention based on hypnosis on cancer patients’ relaxation habits. It also aimed to assess the perceived usefulness of the different components of the intervention to improve their QOL, as well as their long-term use of the different techniques taught during the group intervention.

Concerning the change in relaxation habits, our results showed that more participants practiced any kind of relaxation after the intervention. More specifically, the use of hypnosis largely increased right after the intervention (92.5% at T2 and 69.2% at T3 in the intervention group; and 83.8% at T3 in the WLCG), which confirmed our hypothesis. As most participants had never practiced hypnosis before their inclusion in the study, and as the

Table 5. 10 Most Used Techniques 1 Year after the Intervention (T4) (N = 68)

Most used techniques	Patients using it	Category	If used, how frequently?					Missing data
			1 or more x / week	1–3x / month	< 1x / month	% (n)		
Being coherent between what we say and what we do.	63 (92.7)	Communication skills and relationships	41 (63.0)	11 (17.5)	8 (12.7)	3 (4.8)		
Taking time for ourselves.	62 (91.2)	Concrete activities to take care of ourselves	40 (64.5)	17 (27.4)	5 (8.1)	0		
Setting personal, concrete, positive, and realistic goals associated with observable signs of improvement.	62 (91.2)	Concrete activities to take care of ourselves	27 (43.6)	23 (37.1)	9 (14.5)	3 (4.8)		
Pleasing ourselves every day, with small concrete actions.	61 (89.7)	Concrete activities to take care of ourselves	42 (68.9)	17 (27.9)	2 (3.3)	0		
Paying attention to the gifts of life regarding his own body, making a list of all well-working part of the body.	60 (88.2)	Self-knowledge and support	44 (73.3)	12 (20.0)	2 (3.3)	2 (3.3)		
Setting priorities in tasks by classifying these tasks regarding their urgency and importance.	60 (88.2)	Organization	36 (60.0)	18 (30.0)	5 (8.3)	1 (1.7)		
Thinking about our power to change or not a situation. If yes, act to modify the unpleasant situation, if not, have the wisdom to accept it	60 (88.2)	Concrete coping strategies to deal with difficult situations	34 (56.7)	20 (33.3)	5 (8.3)	1 (1.7)		
Listening to music.	59 (86.8)	Concrete activities to take care of ourselves	45 (76.3)	12 (20.3)	1 (1.7)	1 (1.7)		
Paying attention to small successes.	59 (86.8)	Self-knowledge and support	36 (61.0)	15 (25.4)	5 (8.5)	3 (5.1)		
Frequenting people that make us feel good.	58 (85.3)	Communication skills and relationships	37 (63.8)	18 (31.0)	3 (5.2)	0		

intervention aimed to teach them how to use self-hypnosis to increase their QOL, this result was expected. It is also in line with the study of Zetzel et al. (2021), who found that 62% to 74.5% of the participants in a yoga intervention still practiced yoga at a 6-month follow-up. Concerning the characteristics of the relaxation practice, the frequency of relaxation exercise significantly increased right after the group sessions, as expected. However, in the intervention group, this frequency decreased 4 months after the group sessions and was not significantly different from the baseline frequency anymore. It is possible that, with time passing and the increase of their QOL, as shown in our previous papers (Grégoire et al., 2020), participants did not need to practice relaxation as often. No significant change in the format nor moment of practice was noted. Duration of the exercises and quality of relaxation achieved did not change either. The link between the duration of relaxation exercises and well-being is not clear. A study on a mindfulness-based intervention showed that higher frequency and duration of practice were associated with better psychological well-being (Lacaille et al., 2018), while another study on meditation suggested that a short daily meditation practice could induce similar effects on mood, fatigue, and cognitive functioning than longer-duration meditation practice, if practiced for at least 8 weeks (Basso et al., 2019). Concerning the quality of the relaxation, we hypothesized that it would improve after the intervention, which was not confirmed by our results. However, we can see that, at each measurement time, including baseline, participants reported a good quality of relaxation (mostly “good”). It is then possible that they did not significantly improve on this level, given their already good relaxation skills. Thus, it seems that rather than allowing an improvement in relaxation quality, our group intervention allowed a short-term increase in the frequency of relaxation practice instead.

Concerning the perceived usefulness of the components of the intervention (i.e., being in a group; hypnosis exercises during the sessions; at-home hypnosis exercises with the recordings; self-care tasks; and discussions and reflections during the group sessions), they were all considered to be very useful (ranging from 6.91 to 7.75/10) 1 year after the intervention. The discussion and reflections during the group sessions obtained the highest score, which is in line with other studies showing that the fact of being in a group helps to enhance a sense of hope, support, community, and universality, and to improve coping strategies, sharing of information, and empowerment (Glaser & Glassman, 2014; Stang & Mittelmark, 2010; Ziegler et al., 2022). This also allowed the participants to share their experience with other people who are in the same situation, which is often needed during and after oncology treatment (Glaser & Glassman, 2014; Stang & Mittelmark, 2010; Ziegler et al., 2022).

Finally, concerning the use of the techniques taught during the intervention, the 10 most used techniques were still used by at least 85% of the sample, at least once a week for 43.6% to 76.3% of the participants according to the technique considered. Concrete activities to take care of themselves were the most represented among the 10 most used techniques. As described earlier, a large part of each session was devoted to group discussions about prescribed self-care tasks and more generally about the ways to take care of themselves, so this result is not surprising. Concrete coping strategies and techniques linked to the organization were less represented. We can hypothesize that these techniques need more time to be implemented or that they were less relevant for the participants, who primarily aimed to learn more about themselves and how to take care of themselves when participating in the intervention. Hypnosis exercise recordings were still used by 64.71% of the participants 1 year after

the intervention and so were not among the 10 most used techniques either. Several reasons could explain why these recordings did not show up as one of the most used techniques 1 year after the intervention despite the increased use of hypnosis during the three first measurement times. First, in the list of the different techniques taught, the item was labeled as “hypnosis exercise recordings.” It is then possible that participants still used hypnosis very frequently but not with the recordings. The aim of the group sessions was to teach them how to induce self-hypnosis by themselves, without the help of a therapist or, eventually, of an audio recording. In addition, even if the question was labeled “hypnosis exercises” and not “hypnosis exercise recordings,” it would still be possible that other self-care techniques would be used more often by most participants. Most of these self-care techniques had been worked on intensively during the group sessions and we can expect that once participants have implemented them in their daily life, they will continue to use them regularly, even quite automatically (e.g., coherence between acts and words, setting priorities, paying attention to the gifts of life). In contrast, hypnosis exercises take more time and resources to be performed regularly. Finally, it is also possible that some of these self-care techniques were already used by the participants before their participation in the intervention. Thus, they just continued to use them, while hypnosis was a new skill they learned during the intervention, which takes more time to be regularly implemented in their daily life. This continuous use of self-care techniques 1 year after the intervention underlines their relevance for people with cancer, which is in line with the informal feedback received from our participants as well as with different studies showing the interest of such patients in self-care, self-help, skill development, and empowerment approaches (Brunet & St-Aubin, 2016; Charland-Verville et al., 2017; Henshall et al., 2017; Kim et al., 2017; Kristoffersen et al., 2022; Stang & Mittelmark, 2010).

Our study suffers from several limitations. First, the whole sample could not be considered in all the analyses, as some participants did not practice any kind of relaxation and thus did not answer the subsequent questions. Moreover, only 68 women out of 95 answered the questionnaire 1 year after the intervention. Thus, our results could have been biased by the limited number of participants included in some analyses. Some authors have shown an association between the duration of the study and the dropout rate (Hui et al., 2013; Rabinowitz et al., 2009), which could explain why we lost 28% of our sample between T1 and T4. In addition, our sample suffers from disproportion between men (not considered in the present analyses) and women, and between breast cancers and other cancers, even though we tried to target various cancer populations during the recruitment process. Different studies have suggested that men are less interested in and more rarely use psychological interventions than women (Grégoire, Nicolas, et al., 2018; Martin et al., 2015; Visser, 2013), which could explain the composition of our sample. Another limitation concerns our experimental design. As the WLCG received the group sessions at some point during the study, it is impossible to assess the difference in the midterm (i.e., T3: 3 to 4 months after the intervention group received the intervention) change in relaxation habits between both groups. In addition, the practice of relaxation could have been assessed 1 year after the intervention too. Finally, as discussed earlier, the questionnaire based on the list of techniques taught during the intervention could have been improved by creating another item labeled “self-hypnosis exercises” in addition to “hypnosis exercise recordings.” This would have allowed us to assess the long-term use of hypnosis in all its forms and not only with the audio recordings, which are likely to be quite irrelevant 1 year after the intervention.

In conclusion, this study is one of the first to assess the long-term implementation of self-care, hypnosis, and other relaxation techniques in the daily life of people with cancer following a mind-body group intervention. It also reports the perceptions of the participants themselves about the respective usefulness of different components of the intervention. Our results showed that a group intervention combining self-care and (self-)hypnosis learning allowed more patients to regularly practice any kind of relaxation, especially hypnosis, up to 4 months after the intervention. The five components of the intervention were reported to be very useful, especially the group discussions and reflections. Concrete activities to take care of oneself seem to be particularly implemented by the participants. Given the previous findings and these results, this intervention could be proposed more systematically to people with cancer. One could also imagine proposing this intervention to patients with ongoing oncological treatments or suffering from other pathologies such as chronic pain or phantom limb pain. This would allow an exploration of the perceived usefulness or impact of this intervention among other populations of patients. Our conclusions could also be useful to other teams willing to propose mind-body interventions to people with cancer, as we underlined some components considered to be particularly useful by the participants, and different techniques that are easily and sustainably implemented in the patients' daily lives.

Acknowledgments

We are grateful to all the patients who participated in the study. We also thank our collaborators from the Université Libre de Bruxelles, Darius Razavi, Isabelle Merckaert, France Delevallez, Pauline Waroquier, and Oriane Verkaeren, and all the health professionals working in the CHU of Liège who helped us to recruit the participants needed for our study.

Disclosure Statement

Dr. Jerusalem reports grants, personal fees and non-financial support from Novartis; grants, personal fees and non-financial support from Roche; grants, personal fees and non-financial support from Pfizer; personal fees and non-financial support from Lilly; personal fees and non-financial support from Amgen; personal fees and non-financial support from BMS; personal fees and non-financial support from Astra-Zeneca; personal fees from Daiichi Sankyo; personal fees from AbbVie; non-financial support from Medimmune; and non-financial support from MerckKGaA outside the submitted work. All other authors declare no conflict of interest.

Ethics Approval and Consent to Participate

All procedures performed in this study were in accordance with the ethical standards of the institutional and national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. The study was approved by the Ethic Committee of the Faculty of Medicine of the University of Liege (N°B707201630321), with each participant providing written consent.

Funding

This study was funded by the King Baudouin Foundation [grant 2016-J5120580-205427], the Plan National Cancer of Belgium [grants 138 and 139], the Benoit Foundation (Belgium), the Belgian Foundation Against Cancer [Grants Number: 2017/064 and C/2020/1357], Wallonia as part of

a program of the BioWin Health Cluster and the Belgian National Funds for Scientific Research (FRS-FNRS Télévie). These funds financed the different researchers involved in this study. The funding body had no role in the design of the study and collection, analysis, and interpretation of data and in writing the manuscript. CG is a postdoctoral researcher at FRS-FNRS (Télévie).

ORCID

Charlotte Grégoire  <http://orcid.org/0000-0003-1837-6260>

Data Availability Statement

The full protocol and dataset of this study are available upon request. Please contact the corresponding author (ch.gregoire@uliege.be).

References

- Achimas-Cadariu, P., Iancu, M., Pop, F., Vlad, C., & Irimie, A. (2015). Psychological screening and health related quality of life in Romanian breast cancer survivors. *Journal of Evidence-Based Psychotherapies*, 15(2), 267–284.
- Arnold, M., Rutherford, M. J., Bardot, A., Ferlay, J., Andersson, T. M.-L., Myklebust, T. Å., Tervonen, H., Thursfield, V., Ransom, D., Shack, L., Woods, R. R., Turner, D., Leonfellner, S., Ryan, S., Saint-Jacques, N., De, P., McClure, C., Ramanakumar, A. V., Stuart-Panko, H., . . . Bray, F. (2019). Progress in cancer survival, mortality, and incidence in seven high-income countries 1995–2014 (ICBP SURVMARK-2): A population-based study. *Lancet Oncology*, 20(11), 1493–1505.
- Arring, N. M., Barton, D. L., Brooks, T., & Zick, S. M. (2019). Integrative therapies for cancer-related fatigue. *Cancer Journal*, 25(5), 349–356.
- Basso, J. C., McHale, A., Ende, V., Oberlin, D. J., & Suzuki, W. A. (2019). Brief, daily meditation enhances attention, memory, mood, and emotional regulation in non-experienced meditators. *Behavioural Brain Research*, 356, 208–220. <https://doi.org/10.1016/j.bbr.2018.08.023>
- Batty, G. D., Russ, T. C., Stamatakis, E., & Kivimäki, M. (2017). Psychological distress in relation to site specific cancer mortality: Pooling of unpublished data from 16 prospective cohort studies. *British Medical Journal*, 356, j108. <https://doi.org/10.1136/bmj.j108>
- Baussard, L., Prout-Lima, C., Philipps, V., Portales, F., Ychou, M., Mazard, T., & Cousson-Gélie, F. (2022). Determinants of distinct trajectories of fatigue in patients undergoing chemotherapy for a metastatic colorectal cancer: 6-month follow-up using growth mixture modeling. *Journal of Pain and Symptom Management*, 63(1), 140–150.
- Bicego, A., Monseur, J., Collinet, A., Donneau, A.-F., Fontaine, R., Libbrecht, D., Malaise, N., Nyssen, A.-S., Raaf, M., Rousseaux, F., Salamun, I., Staquet, C., Teuwis, S., Tomasella, M., Faymonville, M.-E., & Vanhauudenhuysse, A. (2021). Complementary treatment comparison for chronic pain management: A randomized longitudinal study. *PLOS ONE*, 16(8), e0256001.
- Brunet, J., & St-Aubin, A. (2016). Fostering positive experiences of group-based exercise classes after breast cancer: What do women have to say? *Disability and Rehabilitation*, 38(15), 1500–1508.
- Carlson, L. E., Zelinski, E., Toivonen, K., Flynn, M., Qureshi, M., Piedalue, K.-A., & Grant, R. (2017). Mind-body therapies in cancer: What is the latest evidence? *Current Oncology Reports*, 19(10), 67.
- Charland-Verville, V., Faymonville, M.-E., Vanhauudenhuysse, A., Raaf, M., Grégoire, C., & Bragard, I. (2017). Apprentissage de l'autohypnose/autobiensveillance en oncologie. Pour qui? Comment? Dans quel intérêt? Une revue de la littérature internationale [Learning self-hypnosis/self-benevolence in oncology. For who? How? In what interest? A review of the international literature]. *Psycho-Oncologie*, 11(1), 51–55. <https://doi.org/10.1007/s11839-017-0614-6>

- Cramer, H., Lauche, R., Paul, A., Langhorst, J., Kümmel, S., & Dobos, G. J. (2015). Hypnosis in breast cancer care: A systematic review of randomized controlled trials. *Integrative Cancer Therapies*, 14(1), 5–15.
- Creswell, J. D. (2017). Mindfulness interventions. *Annual Review of Psychology*, 68(1), 491–516.
- De Rooij, B. H., Oerlemans, S., van Deun, K., Mols, F., de Ligt, K. M., Husson, O., Ezendam, N. P. M., Hoedjes, M., van de Poll-Franse, L. V., & Schoormans, D. (2021). Symptom clusters in 1330 survivors of 7 cancer types from the PROFILES registry: A network analysis. *Cancer*, 127(24), 4665–4674.
- De Vries, M., & Stiefel, F. (2014). Psycho-oncological interventions and psychotherapy in the oncology setting. In U. Goerling (Ed.), *Psycho-Oncology* (Vol. 197, pp. 121–135). Springer. http://link.springer.com/10.1007/978-3-642-40187-9_9
- Die Trill, M. (2013). Anxiety and sleep disorders in cancer patients. *EJC Supplements*, 11(2), 216–224.
- Dyer, C. (2013). Families are warned they can't decide treatment for incapacitated relatives. *British Medical Journal*, 347(dec11 3), f7436–f7436.
- Eason, A., & Parris, B. (2018). Clinical applications of self-hypnosis: A systematic review and meta-analysis of randomized controlled trials. *Psychology of Consciousness: Theory, Research, and Practice*, 6, 262–278. <https://doi.org/10.1037/cns0000173>
- Eaton, L. H., & Hulett, J. M. (2019). Mind-body interventions in the management of chronic cancer pain. *Seminars in Oncology Nursing*, 35(3), 241–252.
- Elliott, J. A., Kealey, C. P., & Olver, I. N. (2008). (Using) complementary and alternative medicine: The perceptions of palliative patients with cancer. *Journal of Palliative Medicine*, 11(1), 58–67.
- Elkins, G. R., Barabasz, A. F., Council, J. R., & Spiegel, D. (2015). Advancing research and practice: The revised APA Division 30 definition of hypnosis. *International Journal of Clinical and Experimental Hypnosis*, 63(1), 1–9.
- Faymonville, M.-E., Bejenke, C., & Hansen, E. (2010). Hypnotic techniques. In A. M. Cyna, M. I. Andrew, S. G. M. Tan, & A. F. Smith (Eds.), *Handbook of communication in anesthesia and critical care* (pp. 249–261). Oxford University Press.
- Glaser, S. R., & Glassman, R. (2014). Group work with individuals with chronic cancer. *Social Work in Health Care*, 53(1), 31–47.
- Gok Metin, Z., Izgu, N., Karadas, C., & Arikan Donmez, A. (2018). Perspectives of oncology nurses on complementary and alternative medicine in Turkey: A cross-sectional survey. *Holistic Nursing Practice*, 32(2), 107–113.
- Green, J. P., Barabasz, A. F., Barrett, D., & Montgomery, G. H. (2005). Forging ahead: The 2003 APA Division 30 definition of Hypnosis. *International Journal of Clinical and Experimental Hypnosis*, 53(3), 259–264.
- Grégoire, C., Bragard, I., Jerusalem, G., Etienne, A.-M., Coucke, P., Dupuis, G., Lanctôt, D., & Faymonville, M.-E. (2017). Group interventions to reduce emotional distress and fatigue in breast cancer patients: A 9-month follow-up pragmatic trial. *British Journal of Cancer*, 117(10), 1442–1449.
- Grégoire, C., Faymonville, M.-E., Vanhauzenhuyse, A., Charland-Verville, V., Jerusalem, G., Willems, S., & Bragard, I. (2020). Effects of an intervention combining self-care and self-hypnosis on fatigue and associated symptoms in post-treatment cancer patients: A randomized-controlled trial. *Psycho-Oncology*, 29(7), 1165–1173.
- Grégoire, C., Faymonville, M.-E., Vanhauzenhuyse, A., Charland-Verville, V., Jerusalem, G., Willems, S., & Bragard, I. (2021). Exploratory controlled study of the impact of a hypnosis-based intervention on the couple's communication and coping in the context of cancer. *International Journal of Clinical and Experimental Hypnosis*, 69(2), 261–276.
- Grégoire, C., Faymonville, M.-E., Vanhauzenhuyse, A., Charland-Verville, V., Jerusalem, G., & Bragard, I. (2018). Randomized controlled trial of an 8-week intervention combining self-care and hypnosis for post-treatment cancer patients: Study protocol. *BMC Cancer*, 18(1), 1113.
- Grégoire, C., Faymonville, M.-E., Vanhauzenhuyse, A., Jerusalem, G., Willems, S., & Bragard, I. (2021). Randomized controlled trial of a group intervention combining self-hypnosis and self-care: Secondary results on self-esteem, emotional distress and regulation, and mindfulness in post-treatment cancer patients. *Quality of Life Research*, 30(2), 425–436.

- Grégoire, C., Faymonville, M.-E., Vanhaudenhuyse, A., Jerusalem, G., Willems, S., & Bragard, I. (2022). Randomized, controlled trial of an intervention combining self-care and self-hypnosis on fatigue, sleep, and emotional distress in posttreatment cancer patients: 1-year follow-up. *International Journal of Clinical and Experimental Hypnosis*, 70(2), 136–155.
- Grégoire, C., Nicolas, H., Bragard, I., Delevallez, F., Merckaert, I., Razavi, D., Waltregny, D., Faymonville, M.-E., & Vanhaudenhuyse, A. (2018). Efficacy of a hypnosis-based intervention to improve well-being during cancer: A comparison between prostate and breast cancer patients. *BMC Cancer*, 18(677), 677.
- Hammer, M. J., Cooper, B., Paul, S. M., Kober, K. M., Cartwright, F., Conley, Y. P., Wright, F., Levine, J. D., & Miaskowski, C. (2022). Identification of distinct symptom profiles in cancer patients using a pre-specified symptom cluster. *Journal of Pain and Symptom Management*, 64(1), 17–27.
- Hayes, S. C., Pistorello, J., & Levin, M. E. (2012). Acceptance and commitment therapy as a unified model of behavior change. *Counseling Psychologist*, 40(7), 976–1002.
- Henshall, C., Greenfield, S., & Gale, N. (2017). The role of self-management practices as mechanisms for re-establishing normality in cancer survivors. *Qualitative Health Research*, 27(4), 520–533.
- Ho, F.-Y.-Y., Chung, K.-F., Yeung, W.-F., Ng, T. H., Kwan, K.-S., Yung, K.-P., & Cheng, S. K. (2015). Self-help cognitive-behavioral therapy for insomnia: A meta-analysis of randomized controlled trials. *Sleep Medicine Reviews*, 19, 17–28.
- Hui, D., Glitza, I., Chisholm, G., Yennu, S., & Bruera, E. (2013). Attrition rates, reasons, and predictive factors in supportive care and palliative oncology clinical trials. *Cancer*, 119(5), 1098–1105.
- Jones, J. M., Olson, K., Catton, P., Catton, C. N., Fleshner, N. E., Krzyzanowska, M. K., McCready, D. R., Wong, R. K. S., Jiang, H., & Howell, D. (2016). Cancer-related fatigue and associated disability in post-treatment cancer survivors. *Journal of Cancer Survivorship*, 10(1), 51–61.
- Kapoor, A., Andrade, A., Hayes, A., Mazor, K., Possidente, C., Nolen, K., Hegeman-Dingle, R., & McManus, D. (2021). Usability, perceived usefulness, and shared decision-making features of the afib 2gether mobile app: Protocol for a single-arm intervention study. *JMIR Research Protocols*, 10(2), e21986.
- Kargo, A. S., Jensen, P. T., Lindemann, K., Hjollund, N. H. I., Lund, B., Haee, M., Möller, S., Hansen, D. G., & Dahl Steffensen, K. (2021). The PROMova study comparing active and passive use of patient-reported outcome measures in ovarian cancer follow-up: Effect on patient-perceived involvement, satisfaction with care, and usefulness. *Acta Oncologica*, 60(4), 434–443.
- Keene, M. R., Heslop, I. M., Sabesan, S. S., & Glass, B. D. (2019). Complementary and alternative medicine use in cancer: A systematic review. *Complementary Therapies in Clinical Practice*, 35, 33–47. <https://doi.org/10.1016/j.ctcp.2019.01.004>
- Kim, S. H., Kim, K., & Mayer, D. K. (2017). Self-management intervention for adult cancer survivors after treatment: A systematic review and meta-analysis. *Oncology Nursing Forum*, 44(6), 719–728.
- Kristoffersen, A. E., Nilsen, J. V., Stub, T., Nordberg, J. H., Wider, B., Mora, D., Nakandi, K., & Bjelland, M. (2022). Use of complementary and alternative medicine in the context of cancer; prevalence, reasons for use, disclosure, information received, risks and benefits reported by people with cancer in Norway. *BMC Complementary Medicine and Therapies*, 22(1), 202.
- Kwekkeboom, K. L., Hau, H., Wanta, B., & Bumpus, M. (2008). Patients' perceptions of the effectiveness of guided imagery and progressive muscle relaxation interventions used for cancer pain. *Complementary Therapies in Clinical Practice*, 14(3), 185–194.
- Lacaille, J., Sadikaj, G., Nishioka, M., Carrière, K., Flanders, J., & Knäuper, B. (2018). Daily mindful responding mediates the effect of meditation practice on stress and mood: The role of practice duration and adherence. *Journal of Clinical Psychology*, 74(1), 109–122.
- Langlois, P., Perrochon, A., David, R., Rainville, P., Wood, C., Vanhaudenhuyse, A., Pageaux, B., Ounajim, A., Lavallière, M., Debarnot, U., Luque-Moreno, C., Roulaud, M., Simoneau, M., Goudman, L., Moens, M., Rigoard, P., & Billot, M. (2022). Hypnosis to manage musculoskeletal and neuropathic chronic pain: A systematic review and meta-analysis. *Neuroscience and Biobehavioral Reviews*, 135, 104591. <https://doi.org/10.1016/j.neubiorev.2022.104591>

- Lin, C., Clark, R., Tu, P., Bosworth, H. B., & Zullig, L. L. (2017). Breast cancer oral anti-cancer medication adherence: A systematic review of psychosocial motivators and barriers. *Breast Cancer Research and Treatment*, 165(2), 247–260.
- Loh, K. P., Zittel, J., Kadambi, S., Pandya, C., Xu, H., Flannery, M., Magnuson, A., Bautista, J., McHugh, C., Mustian, K., Dale, W., Duberstein, P., & Mohile, S. G. (2018). Elucidating the associations between sleep disturbance and depression, fatigue, and pain in older adults with cancer. *Journal of Geriatric Oncology*, 9(5), 464–468.
- Loiselle, C. G. (2023). Now, more than ever, timing is right for oncology nurses to champion, co-design, and promote value-based and strengths-based cancer care! *Canadian Oncology Nursing Journal = Revue Canadienne De Nursing Oncologique*, 33(2), 180–181.
- Martin, E., Bulsara, C., Battaglini, C., Hands, B., & Naumann, F. L. (2015). Breast and prostate cancer survivor responses to group exercise and supportive group psychotherapy. *Journal of Psychosocial Oncology*, 33(6), 620–634.
- Montgomery, G. H., Sucala, M., Baum, T., & Schnur, J. B. (2017). Hypnosis for symptom control in cancer patients at the end-of-life: A systematic review. *International Journal of Clinical and Experimental Hypnosis*, 65(3), 296–307.
- Neufeld, N. J., Elnahal, S. M., & Alvarez, R. H. (2017). Cancer pain: A review of epidemiology, clinical quality and value impact. *Future Oncology*, 13(9), 833–841.
- Rabinowitz, J., Levine, S. Z., Barkai, O., & Davidov, O. (2009). Dropout rates in randomized clinical trials of antipsychotics: A meta-analysis comparing first- and second-generation drugs and an examination of the role of trial design features. *Schizophrenia Bulletin*, 35(4), 775–788.
- Riba, M. B., Donovan, K. A., Andersen, B., Braun, I., Breitbart, W. S., Brewer, B. W., Buchmann, L. O., Clark, M. M., Collins, M., Corbett, C., Fleishman, S., Garcia, S., Greenberg, D. B., Handzo, R. G. F., Hoofring, L., Huang, C.-H., Lally, R., Martin, S., McGuffey, L., . . . Darlow, S. D. (2019). Distress management, version 3.2019, NCCN clinical practice guidelines in oncology. *Journal of the National Comprehensive Cancer Network: JNCCN*, 17(10), 1229–1249.
- Rojas-Cooley, M. T., & Grant, M. (2006). Complementary and alternative medicine: Oncology nurses' experiences, educational interests, and resources. *Oncology Nursing Forum*, 33(3), 581–588.
- Rojas-Cooley, M. T., & Grant, M. (2009). Complementary and alternative medicine: Oncology nurses' knowledge and attitudes. *Oncology Nursing Forum*, 36(2), 217–224.
- Sawni, A., & Breuner, C. C. (2017). Clinical hypnosis, an effective mind-body modality for adolescents with behavioral and physical complaints. *Children*, 4(4), 19.
- Spiegel, D. (1985). The use of hypnosis in controlling cancer pain. *CA: A Cancer Journal for Clinicians*, 35(4), 221231.
- Spiegel, D. (1991). Neurophysiological correlates of hypnosis and dissociation. *Journal of Neuropsychiatry and Clinical Neurosciences*, 3(4), 440–445. <https://doi.org/10.1176/jnp.3.4.440>
- Stang, I., & Mittelmark, M. B. (2010). Intervention to enhance empowerment in breast cancer self-help groups. *Nursing Inquiry*, 17(1), 47–57.
- Sung, H., Ferlay, J., Siegel, R. L., Laversanne, M., Soerjomataram, I., Jemal, A., & Bray, F. (2021). Global cancer statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA: A Cancer Journal for Clinicians*, 71(3), 209–249.
- Vanhaudenhuyse, A., & Faymonville, M.-E. (2015). Intérêt de l'hypnose dans le domaine du soin [Interest in hypnosis in the field of care]. *La Revue Du Praticien*, 65(4), 457–459.
- Vanhaudenhuyse, A., Gillet, A., Malaise, N., Salamun, I., Barsics, C., Grosdent, S., Maquet, D., Nyssen, A.-S., & Faymonville, M.-E. (2015). Efficacy and cost-effectiveness: A study of different treatment approaches in a tertiary pain centre. *European Journal of Pain*, 19(10), 1437–1446.
- Vanhaudenhuyse, A., Gillet, A., Malaise, N., Salamun, I., Grosdent, S., Maquet, D., Nyssen, A.-S., & Faymonville, M.-E. (2017). Psychological interventions influence patients' attitudes and beliefs about their chronic pain. *Journal of Traditional and Complementary Medicine*, 8(2), 296–302.
- Visser, A. (2013). Cancer in a psychosomatic perspective. In K. Koh (Ed.), *Somatization and psychosomatic symptoms* (pp. 225–238). Springer. https://doi.org/10.1007/978-1-4614-7119-6_17
- Weis, J., Gschwendtner, K., Güthlin, C., Holmberg, C., & Horneber, M. (2022). Utilisation of complementary medicine in cancer patients and survivors: Expected benefits and its association to psychosocial factors. *European Journal of Cancer Care*, 31(6), e13690.

- Weitzenhoffer, A. M. (2002). Scales, scales and more scales. *American Journal of Clinical Hypnosis*, 44(3–4), 209–219.
- Zetzel, T., Pittig, A., Renner, A., van Oorschot, B., & Jentschke, E. (2021). Yoga therapy to reduce fatigue in cancer: Effects of reminder e-mails and long-term efficacy. *Supportive Care in Cancer: Official Journal of the Multinational Association of Supportive Care in Cancer*, 29(12), 7725–7735.
- Ziegler, E., Hill, J., Lieske, B., Klein, J., von Dem, O., & Kofahl, C. (2022). Empowerment in cancer patients: Does peer support make a difference? A systematic review. *Psycho-Oncology*, 31(5), 683–704.

Eine Gruppenintervention, in der Selbsthypnose und Selbstfürsorge in der Onkologie kombiniert werden: Umsetzung im täglichen Leben und festgestellter Nutzen

CHARLOTTE GRÉGOIRE, MARIE-ELISABETH FAYMONVILLE, AUDREY VANHAUDENHUYSE, GUY JERUSALEM, JUSTINE MONSEUR, UND ISABELLE BRAGARD

Zusammenfassung: Multikomponente Geist-Körper Interventionen werden in der Onkologie vermehrt studiert, um die Lebensqualität (QOL) der Patienten zu verbessern. Allerdings ist der jeweilige Nutzen der einzelnen Komponenten oder der langfristige Wert für die Teilnehmer selten erforscht. An dieser Studie nahmen 95 Frauen mit unterschiedlicher Krebsdiagnose an einer Gruppe für Selbsthypnose und Selbstfürsorge teil. Es wurden verschiedene Fragebogen bearbeitet: Vor (T1), unmittelbar danach (T2), 3 bis 4 Monate danach (T3), sowie 1 Jahr (T4) nach der Intervention. Nach der Intervention übten 97,5% der Teilnehmer irgendeine Art Entspannung (vs. 50% zu Beginn), insbesondere Hypnose. Die verschiedenen Anteile der Intervention (z.B. zu einer Gruppe zu gehören, Hypnoseübungen während der Sitzungen und zuhause, Selbstfürsorge-Übungen und Gespräche in den Gruppensitzungen) wurden insgesamt als nützlich empfunden ($M = 6.91 - 7.75/10$). Ein Jahr nach den Sitzungen bestanden die 10 meist verwendeten Techniken hauptsächlich in konkreten Aktivitäten der Selbstfürsorge. Diese Intervention scheint von erheblicher Bedeutung für die Frauen zu sein, die Krebs hatten. Die Ergebnisse gestatten erste Überlegungen zu den Wirkmechanismen unserer Intervention.

ALIDA IOST-PETER
Dipl.-Psych.

Une intervention de groupe associant l'autohypnose et des soins auto-administrés en oncologie: mise en œuvre dans la vie quotidienne et utilité perçue

CHARLOTTE GRÉGOIRE, MARIE-ELISABETH FAYMONVILLE, AUDREY VANHAUDENHUYSE, GUY JERUSALEM, JUSTINE MONSEUR ET ISABELLE BRAGARD

Résumé: Les interventions corps-esprit à composantes multiples sont de plus en plus étudiées en oncologie pour améliorer la qualité de vie (QOL) des patients. Cependant, l'utilité respective de chacune de leurs composantes ou leur utilisation à long terme par les participants sont rarement évaluées. Dans cette étude, 95 femmes atteintes de différents types de cancer ont participé à un groupe d'auto-hypnose et d'auto-bienveillance. Différents questionnaires ont été administrés avant (T1), juste après (T2), 3 à 4 mois après (T3) et 1 an après (T4) l'intervention. Après l'intervention, 97,5% des participants pratiquaient régulièrement une forme de relaxation (vs 50% au départ), en particulier l'hypnose.

Les différentes composantes de l'intervention (c'est-à-dire la participation à un groupe, des exercices d'hypnose pendant les séances et à domicile, les tâches d'auto-soins et les discussions pendant les séances de groupe) ont toutes été considérées comme très utiles ($M = 6,91-7,75/10$). Un an après l'intervention, les 10 techniques les plus utilisées étaient principalement des activités concrètes pour prendre soin de soi. Cette intervention semble très pertinente pour les femmes ayant eu un cancer. Nos résultats permettent une première réflexion sur les mécanismes d'action de notre intervention.

GÉRARD FITOUSSI, M.D.
President of the European Society of Hypnosis

Una intervención grupal combinando la autohipnosis y el autocuidado en oncología: Implementación en la vida diaria y su utilidad percibida

CHARLOTTE GRÉGOIRE, MARIE-ELISABETH FAYMONVILLE, AUDREY VANHAUDENHUYSE, GUY JERUSALEM, JUSTINE MONSEUR, Y ISABELLE BRAGARD

Resumen: Las intervenciones multicomponente de mente y cuerpo se estudian cada vez más en oncología para mejorar la calidad de vida (QOL) de los pacientes. Sin embargo, rara vez se evalúa la utilidad respectiva de cada uno de sus componentes o su uso a largo plazo por parte de los participantes.

En este estudio, 95 mujeres con diferentes diagnósticos de cáncer participaron en un grupo de autohipnosis y autocuidado. Se administraron diferentes cuestionarios antes (T1), justo después (T2), 3 a 4 meses después (T3) y 1 año después (T4) de la intervención. Después de la intervención, el 97.5% de los participantes practicaba regularmente algún tipo de relajación (vs. 50% al inicio del estudio), especialmente hipnosis. Los diferentes componentes de la intervención (es decir, estar en grupo, ejercicios de hipnosis durante las sesiones y en casa, tareas de autocuidado y discusiones durante las sesiones grupales) se consideraron muy útiles ($M = 6.91-7.75/10$). Un año después de la intervención, las 10 técnicas más utilizadas fueron principalmente actividades concretas para cuidarse. Esta intervención parece muy relevante para las mujeres que han tenido cáncer. Nuestros resultados permiten una primera reflexión sobre los mecanismos de acción de nuestra intervención.

VANESSA MUÑIZ

Baylor University, Waco, Texas, USA