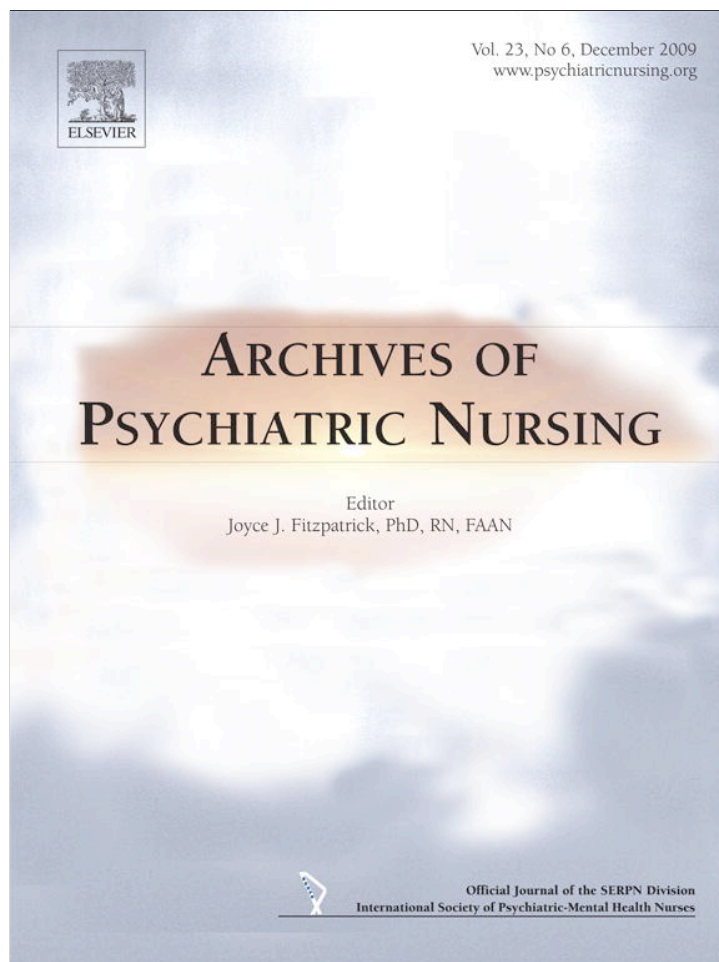


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The Effects of Guided Imagery on Comfort, Depression, Anxiety, and Stress of Psychiatric Inpatients with Depressive Disorders

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This article describes the efficacy of a guided imagery intervention for decreasing depression, anxiety, and stress and increasing comfort in psychiatric inpatients with depressive disorders. A quasi-experimental design sampled 60 short-term hospitalized depressive patients selected consecutively. The experimental group listened to a guided imagery compact disk once a day for 10 days. The Psychiatric Inpatients Comfort Scale and the Depression, Anxiety, and Stress Scales (DASS-21) were self-administered at two time points: prior to the intervention (T1) and 10 days later (T2). Comfort and DASS-21 were also assessed in the usual care group at T1 and T2. Repeated measures revealed that the treatment group had significantly improved comfort and decreased depression, anxiety, and stress over time.

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DEPRESSION HAS A significant impact at family, social, and economic levels and could become the first cause of morbidity in developed countries in the near future (Coppen, 1994; World Health Organization, 2001).

Psychiatric inpatients with mood disorders experience their condition in a complex existential context of generalized discomfort, which results from the illness and hospitalization itself. In some situations hospitalization is repeated many times until the person can overcome the illness state. Patients feel constrained, impotent, uncomfortable, imprisoned in illness, needing to (re)build themselves to continue living, and believing that they can only rebuild through hospitalization. The hospital is perceived as a refuge, but it is also a place where freedom is limited (Apóstolo, 2007). Within this setting, guided imagery (GI) may be beneficial in reducing the many discomforts associated with mood disorders, including depression, stress-related symptoms, anxiety, inability to hold a job, and relationship problems.

Throughout its history, the mission of nursing has been focused on the discomfort of patients and interventions to relieve it. Nursing should base its interventions in operable theories that support the provision of comfort through assessment of the patients' needs, implementation of care, and assessment of the results from those interventions. In this context, Comfort Theory has regained a relevant role in the philosophy of nursing care (Kolcaba, 2003) and subsequently has been the target of interest of several different authors (Apóstolo, 2007; Apóstolo, Batista, Macedo, & Pereira, 2006; Goodwin, Sener, & Steiner, 2007;

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Jenny & Logan, 1996; Koehn, 2000; Morse, Bottorff, & Hutchinson, 1994; Schoener & Krysa, 1996; Schuiling & Sampsel, 1999; Walker, 2002). Therefore, the purpose of this study is to test the effects of a GI intervention on patients' perception of comfort, depression, stress, and anxiety in a sample of persons hospitalized for mood disorders.

It is hypothesized that after 10 days, patients with mood disorders who received the GI intervention on a compact disk (CD) once a day for 10 days will have higher comfort and lower depression, stress, and anxiety than the comparison group.

BACKGROUND

Conceptual Framework of Comfort

The conceptual framework of comfort, derived from the mid range theory by Kolcaba (1991, 2003) supports this study. Comfort is defined for nursing as the immediate experience of feeling strengthened when basic human needs for relief, ease, and transcendence are addressed in four contexts of experience (physical, psychospiritual, sociocultural, and environmental). In part, this definition originates from its archaic definition "to strengthen greatly," which is relevant for patients in stressful health care situations and who must be strengthened to meet their future challenges.

Relief is the state in which a specific comfort need has been met, essential for the person to reestablish her or his normal functioning; ease is a state of calm or contentment and is needed for effective performance. Relief presupposes the existence of previous discomforts, and ease presupposes the attention to risk factors for specific discomforts. Transcendence is the state in which persons feel motivated or inspired to control their fate, resolve their problems, and make constructive plans for their futures.

These three types of comfort are experienced in the following four contexts: physical, psychospiritual, sociocultural, and environmental. The physical context pertains to bodily sensations; the psychospiritual context pertains to the internal awareness of self, including sexuality and meaning in one's life, and it can also encompass one's relationship to a higher order or being. The sociocultural context pertains to interpersonal, societal relationships, and family traditions. The environmental context involves light, noise, equipment (furniture), color, temperature, and natural versus synthetic elements in one's surroundings. The four contexts combined with the three types of comfort form a taxonomic structure (TS) of 12 cells (Figure 1), which represents the total gestalt of holistic patient comfort from the perspective of patient's needs and the fulfillment of their needs (Kolcaba, 1991, 2003). The TS guided the construction of the comfort questionnaire, which was used to measure the efficacy of the intervention in this study. Comfort Theory (Kolcaba, 2003) also states that a comforting intervention, given over time, enhances the comfort of patients in stressful health care situations. The intervention in this study is GI.

When comfort is enhanced, patients are better able to be successful in their health-seeking behaviors (HSBs). Scholtfeldt (1975) included internal behaviors and external behaviors in her definition of HSBs, and both of these behaviors are incorporated into Comfort Theory. Therefore, it was hypothesized that increased comfort would lead to a reduction in anxiety, stress, and depression.

Guided Imagery

In the context of this study, GI is defined as the use of the imagination to bring about positive mind/body responses (Rossman, 2000). It is a cognitive process that evokes and uses many senses: sight,

	RELIEF	EASE	TRANSCENDENCE
PHYSICAL			
PSYCHOSPIRITUAL			
ENVIRONMENTAL			
SOCIOCULTURAL			

Fig 1. Taxonomic structure of comfort.

sound, smell, taste, and touch and also the senses of movement. All of these senses together produce regenerative changes in the mind and body (Achterberg, 1985). GI is a program of instructions meant to help people acquire a state of psychological and physiological ease through muscular relaxation and positive mental images, relieving the discomforts provoked by symptoms associated with mood disorders (Apóstolo, 2007). Increasing adaptive responses in depressive individuals requires replacing the negative processes of thinking with a more positive cognitive style (Achterberg, 1985; Rossman, 2000). GI is a complementary nursing intervention that can be implemented in addition to other therapeutic approaches to mood disorders. Studies show that focusing the imagination in a positive way can result in a state of ease, encouragement, and mood regulation, all of which allow the patient to reestablish a state of physical and mental health (Rossman, 2000).

Guided Imagery and Depression

Currently, it is thought that good body functioning is accompanied by positive thoughts, whereas pathological body functioning is accompanied by negative and repetitive thoughts (Damásio, 2004). In the brain, a thought, idea, or mental image work as “emotionally competent stimuli.” These stimuli, whether prescribed by biologic evolution or learned have the capacity to produce certain patterns of homeostasis. The state of sadness is accompanied by a reduced number of positive mental images and by more excessive attention to those images. When persons have the experience of positive thoughts, their mind represents more than well-being; it also represents well-thinking. On the contrary, feeling sadness is associated not only with sickness but also with an inefficient way of thinking, concentrated around a limited number of ideas of loss (Damásio, 2004).

In GI, positive mental images and positive affective experiences can counteract the depression rumination spiral (Folkman & Moskowitz, 2000). This process works as an adaptive alternative to decompensation, raising the mood, and relieving depressive symptoms. Therefore, GI contributes to antirumination strategies that, as Nolen-Hoeksema (1991, 2000) states, are debilitating. Positive mental images have a relaxing effect and, consequently, a psychophysiologic and cognitive effect (Singer, 2006). When depressed individuals have access to

positive mental images and to a state of body relaxation, they are able to reorient their thoughts away from unpleasant stimuli. Thus, positive thoughts contribute to an improvement in feelings about oneself and the world.

Results from the empirical literature indicated that GI was effective in improving mood states in individuals with a variety of illnesses. Sloman (2002) conducted a community-based nursing study in 56 people with advanced cancer. Progressive muscle relaxation and GI training revealed significant decreases in depression. Campbell-Gillies (2004) used a program including positive mental images and music with 45 women with breast cancer. Her findings revealed that GI decreased depression and anxiety over a six-cycle period of chemotherapy. McKinney, Antoni, Kumar, Times, and McCabe (1997) used GI combined with music with 28 healthy adults and reported significant decreases in depression, fatigue, and total mood disorders between pretest and postsessions. Identical outcomes were revealed in the study of Watanabe et al. (2006), with a sample of 148 healthy adults, using relaxation and positive mental images. After two sessions, positive mood increased, and negative mood decreased. Finally, in an experimental design, Kolcaba and Fox (1999) assessed the effects of GI for increasing comfort over time in patients with breast cancer going through radiation therapy. However, no experimental studies have been conducted for patients in a psychiatric context to increase their comfort.

Methods

Design

This quasi-experimental design was used to measure the differences in comfort, depression, anxiety, and stress between a treatment group and a usual care group (comparison) of short-term psychiatric inpatients diagnoses with depressive mood disorders.

Intervention

GI was recorded on a 21-minute-long CD for this study by a collaborator, a clinical psychologist, chosen because of her pleasing voice and considerable knowledge about mental health. In the audio-taped CD, patients were invited to (a) do deep diaphragmatic breathing using the abdomen and

diaphragm; (b) do progressive muscle relaxation exercises involving tension then full relaxation of each muscle group; (c) imagine relaxing natural scenes like landscapes, paying attention to smells and natural sounds to stimulate the senses; (d) imagine meeting somebody with whom they could share their life situation; and (e) create positive, comforting, and serene images of the hospital context. The therapist intended that patients idealize a space where they could experience a sense of ease, safety, refuge, positive images and becoming free of disturbing thoughts.

The CD script was guided by the literature review about GI (Achterberg, 1985; Rossman, 2000), relaxation (Payne, 2003), comfort needs of patients in stressful health care situations (Kolcaba, 2003), and a qualitative study about the lived experience of comfort/discomfort of psychiatric mental inpatients (Apóstolo, 2007). For example, the following statements addressed physical, social, environmental, and psychospiritual comfort by improving feelings of peace, freedom, and transcendence: "...imagine a meeting with somebody with whom you could share your life situation...What would you like to share... Feel this environment as a place of peace...where you feel protected...where you can renew your energy and your life...This is calm and safe environment where you feel free and in peace...".

The CD was submitted to a validation process including experts and 25 patients and nursing students. Between 70% and 88% agreed or strongly agreed about the relaxing quality of the CD, mental images, voice, music, and the volume. However, only 28% agreed or strongly agreed about the ease of breathing exercises. According to the participants' suggestions, the time between inspiration and expiration was shortened. Soft and relaxing background music was added as a background for the script (Apóstolo, 2007).

Measures

Psychiatric Inpatients Comfort Scale (PICS), Portuguese version, was developed by Apóstolo, Kolcaba, Mendes, and Antunes (2007) based on Kolcaba's (1991, 2003) conceptual framework of comfort assessing the three types and the four contexts of comfort. In the questionnaire-developing process the authors of the PICS evaluated reliability, construct validity, and concurrent validity. The psychometric properties of the PICS were sufficient in pilot testing to allow its utilization as a comfort

assessment in a psychiatric clinical context. The PICS is 5-point *Likert* type scale with 42 items for self-reporting ranging from 1, "It doesn't correspond to anything that happens with me" to 5, "It totally corresponds to what happens with me." Participants were asked to mark the extent to which each statement applied to him/her during the last 10 days. Consistent with its holistic perspective, Comfort was computed for the total scale. For the sample in this study, the Cronbach's alpha was 0.87 (Time 1) to 0.93 (Time 2) and the PICS demonstrated a medium effect size. Portuguese and English versions of PICS are available on Kolcaba (on line).

Depression, Anxiety, and Stress Scales (DASS-21) by Lovibond and Lovibond (1995) was translated from English into Portuguese by Apóstolo, Mendes, and Azeredo (2006). In the translation process, the authors assessed scale reliability, construct validity, and concurrent validity. The DASS-21 contained a set of three 4-point *Likert*-type subscales for self-reporting. Each subscale consisted of seven items, aimed at assessing depression, anxiety, and stress. Participants were asked to mark the extent to which each statement applied to him or her. There were four possible answers in terms of severity or frequency, organized in a scale from 0 to 3. The result was obtained by adding the scores of the items for each of the three subscales and total scale for the total DASS-21. For the sample in this study, the Cronbach's alpha was .93 (Time 1) and .95 (Time 2).

Anxiety was operationalized by elevated levels of physiological hyperarousal, whereas depression was characterized by low levels of positive and negative affect. The stress concept included questions related to negative affective states or conditions and was considered by the authors as an affective reaction standard or state that has clear affinities with anxiety (Lovibond & Lovibond, 1995).

Ethical Considerations

The study was approved by the ethical commissions of the three psychiatric hospitals. The patients completed the questionnaires and began the intervention after signing informed consent forms. The researcher obtained the informed consent.

Sample

Power analysis was based on previous published studies about GI and the relationship between GI,

comfort, and depression. The power analysis indicated that 60 total patients were needed to achieve significance at an alpha of .05.

Sixty short-term hospitalized depressive patients (experimental group: 30, comparison group: 30) were selected from three psychiatric unities/facilities with identical characteristics from the Centre of Portugal by consecutive sampling. At T1, groups were equivalent in demographics (Table 1).

Each participant submitted to a preparatory interview by the researchers who introduced the study and evaluated his or her clinical condition. Inclusion criteria were the following: adults; diagnosed as having clinical depression and classified from moderate to extremely severe depression, according DASS-21 classification (Lovibond & Lovibond, 1995); able to read and understand Portuguese; and with the willingness to participate. Exclusion criteria were presence of psychotic symptoms and cardiac and breathing problems (Payne, 2003).

To avoid contact and contamination between experimental and usual care groups, the selection process was as follows: The first 20 women and 10 men hospitalized with depressive disorders between October 2005 and January 2006 were selected for the experimental group, since their clinical situation triggered the development of the protocol. The reason for proportional sampling was that depression affects 1.5 to 3 times more females than males

(Dew, Lynn, & Hall, 2003), and in those psychiatric settings, this proportion held true.

Procedures

After the individuals in the experimental group were selected and signed informed consent, the intervention was introduced. The audiotaped CD was given to the patients at around 9 p.m. because at this time the environment was quiet and it was thought that the CD would promote relaxation, leading to a good night's sleep.

The experimental group was to listen to the GI audio CD once a day for 10 days. Self-reports of adherence, success, and adverse manifestations of each CD session were monitored by the head nurse and recorded in the patient's intervention plan. The instruments (PICS and DASS-21) were administered at two time points for the experimental group: prior to the introduction of intervention (T1) and 10 days later, which was the end of the intervention (T2). Four patients did not complete the 10 sessions because they got discouraged with the protocol. They were excluded from the study and were replaced by new patients. No adverse effects were reported.

After the intervention group completed the study, the selection of individuals for the usual care group was initiated. Thus, this group included patients who had been hospitalized between January and March 2006. The patients were matched with the

Table 1. Sample Characteristics and Group Comparisons of Sociodemographic and Clinical Data

Variables	Experimental (<i>n</i> = 30)		Comparison (<i>n</i> = 30)		Total (<i>n</i> = 60)		
	<i>n</i>	%	%	<i>n</i>	<i>n</i>	%	
Gender	Male	20	66.67	66.67	20	20	33.33
	Female	10	33.33	33.33	10	40	66.67
$\chi^2 = 0.00, P = 1.00$							
Marital status	Married	18	60.00	56.67	17	35	58.33
	Unmarried couples	1	3.33	10.00	3	4	6.67
	Single	6	20.00	16.67	5	11	18.33
	Divorced	5	16.67	13.33	4	9	15.00
	Widowed	–	0.00	3.33	1	1	1.67
$\chi^2 = 2.23, P = .69$							
Education	4 years	1	3.33	3.33	1	2	3.33
	5–9 years	15	50.00	53.33	16	31	51.67
	10–12 years	6	20.00	16.67	5	11	18.33
	Higher	8	26.67	26.67	8	16	26.67
$\chi^2 = 0.123, P = .99$							
Age	Min = 20, Max = 58		Min = 19, Max = 55		M = 40.38		
	M = 39.57, SD = 11.41		M = 41.20, SD = 9.68		SD = 10.53		
	t = -0.60, P = .65						

individuals in the experimental group by socio-demographic data (age, gender, marital status, and education). No changes in hospital staff or policy occurred this period. The instruments (PICS and DASS-21) were administered in the comparison group at the same intervals but without the GI intervention.

Data Analysis

A significance level of .05 was established a priori for all statistical tests. Chi-square, Independent *t* tests, paired *t* tests, and repeated measures analysis of variance were used to examine the initial group's equivalence on demographic characteristics depression, anxiety, stress, and comfort and changes over time on comfort on the DASS and PICS.

RESULTS

Table 2 summarizes the groups' changes on the DASS-21: *t* tests for independent samples revealed groups (intervention and comparison) were equivalent at T1 but different at T2. The treatment group had significantly lower levels of depression, anxiety, and stress (DASS-21; -0.96) than the control group (-0.37) after 10 days of GI intervention ($F = 11.76, P = .00$). GI explains 17% of the variance ($\eta^2 = 0.17$), power = 0.92.

Changes in each of the DASS-21 subscales revealed that the treatment group had significantly lower depression, anxiety, and stress. Variance explained by the intervention was 10% for depression, 13% for anxiety, and 17% for stress. Power ranged between 0.71 (depression) and 0.92 (stress).

Table 3 summarizes the groups' changes on total comfort: *t* tests for independent samples revealed

groups (intervention and comparison) were equivalent at T1 but different at T2. The treatment group had significantly higher comfort (+0.49) than the comparison group (+0.20) after 10 days of GI intervention ($F = 4.42, P = .04$). GI explained 7% of the total variance ($\eta^2 = 0.07$), power = 0.54.

Comfort scores were strongly predictive of who would show decreased symptoms of depression, anxiety, and stress on the DASS-21. At time 2, the total score on the DASS-21 was negatively correlated with the total comfort score ($r = -0.73, P = .00$). The negative correlation meant that persons with higher comfort had lower depression, anxiety, and stress.

DISCUSSION

Power greater than 0.50 are traditional in social sciences. As Cohen (1988) reported, a statistical test must have a power of 0.80, and the probability of a type II error of 0.20. By these criteria, we lost one in five genuine effects. However, Murphy and Myors (1998) reported that in the social sciences, power usually ranges from 20% to 50%. Therefore, these investigators recommend using a power of 0.50 in future similar research, where the intervention has minimal known harmful effects.

In future research, data about medications and their dosages should be recorded for each patient at each time point. These data would provide information about possible covariates, should baseline scores be significantly different at baseline between the two groups. It would be interesting to determine if the complementary GI intervention was correlated with a reduction in psychiatric medications as well. Future research also should

Table 2. Different Evolution of Experimental and Comparisons Psychiatric Inpatients on Depression, Anxiety, and Stress (DASS-21)

DASS-21	Time			
	<i>t</i> ₁		<i>t</i> ₂	
Groups:	\bar{X}	S	\bar{X}	S
Experimental	1.93	0.62	0.97	0.63
Control	1.82	0.72	1.45	0.86
	<i>t</i> = .65 <i>P</i> = .26		<i>t</i> = -2.48 <i>P</i> = .01	
	Difference on evolution <i>F</i> = 11.76; <i>P</i> = .00 $\eta^2 = 0.17$ Power = 0.92			

Table 3. Different Evolution of Experimental and Comparisons Psychiatric Inpatients on Total Comfort

Total Comfort	Time			
	t ₁		t ₂	
Groups:	\bar{X}	SD	\bar{X}	SD
Experimental	3.10	0.47	3.59	0.60
Comparison	3.06	0.56	3.26	0.66
	t = .30 P = .39		t = 2.01 P = .03	
	Difference on evolution F=4.42; P=.04 $\eta^2 = 0.07$ Power=0.54			

include a third or fourth comparison group who receive, for example, only relaxation, breathing exercises, and/or music or neutral images. Gender differences should be compared for the effectiveness of GI on the same outcomes, and follow-up assessment should also be developed.

Results provide evidence that the GI intervention decreased feelings of depression, anxiety, and stress while increasing personal perception of comfort. In the GI audio CD, relaxing and peaceful images were suggested, and individuals were asked to idealize a secure and peaceful therapeutic environment where professional help and positive affective changes occur. Specifically, patients felt more relieved of their depressive symptoms and experienced a state of greater ease, satisfaction, and harmony. These feelings allowed them to benefit more from their other therapeutics, achieve more efficient improvement, and attain or regain competence to plan and control their destiny.

The results of this study can be compared with others using GI programs. As referenced above, results of McKinney et al. (1997), Sloman (2002), Campbell-Gillies (2004), and Watanabe et al. (2006) showed the positive effects of GI in mood regulation, although comfort was not measured. The study using GI with women going through radiation therapy showed positive effects of GI on comfort (Kolcaba & Fox, 1999). The findings from this study are consistent with previous descriptive ones about the effectiveness of GI for psychiatric patients. The study also demonstrated the sensitivity of the comfort questionnaire to detect significant

changes in comfort over time given an effective intervention. Both the intervention and measurement strategies were consistent with a holistic and humanistic approach to psychiatric care.

The intervention of GI has many advantages including its effectiveness, its affordability, and its simplicity. Therefore, nurses can include this intervention as part of the health care plan to assist patients to relieve their discomfort and reach a state of homeostasis. This will enable patients to transcend their limitations and face the problems of life. It is possible that GI, used as complementary intervention, can contribute to the reduction of antidepressive medication dosage and, consequently, to a diminution of related side effects and adherence to a more holistic therapy.

CONCLUSION

If the way people think influences the way people feel, positively or negatively, then positive thinking can relieve the depressive state and related discomforts. GI can play a role in cognition, even if people are not aware of that fact (Thomas, 1999). GI helps fight rigid, automatic, and desperate thoughts and, in this sense, helps to reinforce self-esteem and personal transcendence. Self-esteem and transcendence contribute to a more positive experience, which enhances positive affection (manifestations of anhedonia and the absence of positive emotional experiences with a lack of pleasure energy and disinterest) and interferes with negative affection (nervousness, tension and

preoccupation, anger, guilt, dissatisfaction, sense of rejection or sadness, among others).

Imagery creates a bridge between mind and body, linking perception, emotion, and psychological, physiological, and behavioral responses. According to Gilbert, Baldwin, Irons, Baccus, and Palmer (2006), shifts of emotions associated with anxiety and depressive disorders are often related to images. The ability to generate powerful, warm, and accepting images seems significantly protective of depression symptoms. It may be the inability to generate warm images, as much as the ability to neutralize self-criticism that is central to some depressions or other emotional difficulties.

This intervention is effective in enhancing patients' comfort and decreasing symptoms when they have a depressive disorder. Interpretation of the results is to be made bearing in mind that this was a complementary intervention (in addition to other interventions that are part of the usual protocols in these patients).

Because of its effectiveness and also because it is a relatively easy method for individuals to learn and use, psychiatric nurses could include this intervention as part of their integrative treatment plans.

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