A hypnotherapy intervention for the treatment of anxiety in patients with cancer receiving palliative care

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nxiety is more common in patients with cancer than in healthy populations (Jackson and Lipman, 2000). Stiefel and Razavi (1994) and Roth and Massie (2009) argue that the level of anxiety increases as cancer progresses. Anxiety is a natural reaction to life-threatening illness but is considered pathological if its intensity, duration, or resulting dysfunction are greater than would be expected. It can become more prominent at crisis or transition points in a patient's illness, such as the advanced or terminal stages of disease. According to Jackson and Lipman (2000) the prevalence of anxiety in palliative care patients can range from 14% to 26%.

This paper reports a pilot study conducted in a hospice setting in the south of England that assessed whether a hypnotherapy intervention could relieve anxiety and other symptoms in patients with advanced cancer.

Background

In palliative care patients, anxiety is often attributed to a reaction to diagnosis, treatment, and its possible outcomes. However, although fears about impending death may well be present, they are not necessarily the main source of anxi- ety in terminally ill patients. Concerns about family and loved ones may contribute (Jackson and Lipman, 2000), and several organic causes may also co-exist, e.g. medical conditions, undertreated symptoms such as pain, and pharmacological side effects (Stiefel and Razavi, 1994). Anxiety is a term that encompasses several disease entities (American Psychiatric Association, 2000), and any of these may be pre-existing (Noyes et al, 1998; Jackson and Lipman, 2000).

Effective strategies for the management of anxiety in palliative care may include psychother- apy, behavioural therapy, and pharmacological interventions (Roth and Massie, 2009). Pharmacological therapies are used widely for managing anxiety in terminal illness despite the lack of research on effectiveness in palliative care patients (Jackson and Lipman, 2004). Non- pharmacological management of anxiety may include the use of visualization techniques (Maguire et al, 1993) and the teaching of pur- poseful muscle relaxation (Jackson and Lipman, 2000). If panic is a factor, an exploration of the process that leads to the panic state and teaching of coping strategies may be effective, particularly if fears of dying and a loss of control are evident (Kirsch et al, 1995).

Hypnotic inductions closely resemble these conventional relaxation and psychotherapy techniques and may be a vehicle by which these techniques can be taught (Kirsch et al, 1995; Douglas, 1999). Liossi and Mystakidou (1996) describe hypnosis as a psychological state that may serve to heighten some human capacities while allowing others to fade into the background. It is a procedure during which

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the practitioner suggests that a client, patient, or subject experiences changes in sensations, perception, thoughts, or behaviour. The

hyp- notic context is established by an induction procedure that usually includes suggestions of relaxation, calmness, and wellbeing. It has the benefit of being a non-invasive intervention free from pharmacological side effects. Hypnotherapy has been shown to be useful in various settings (Hunter, 1992), including in palliative care (National Institute for Health and Clinical Excellence, 2004), and for various symptoms such as pain, nausea and vomiting, sleep, and anxiety attacks (Kraft, 1990; Genuis, 1995).

Despite the plethora of anecdotal evidence that hypnotherapy is a valuable resource for assisting in the alleviation of psychological and emotional distress in those with terminal illness (Genuis, 1995; Douglas, 1999), a sys- tematic review of hypnotherapy in terminally ill adult cancer patients concluded that there is a paucity of evidence to support the use of hypnotherapy for symptom relief (Rajasekaran et al, 2005). The present study aimed to explore the impact of hypnotherapy on the management of anxiety and its associated symptoms in palliative care patients in order to inform a decision on whether the hospice should continue offering hypnotherapy as a therapeutic intervention for anxiety. The inten- tion is that this will be followed up by a larger study, and hence the pilot also served to test the study design and outcome measures in order to reduce the number of unanticipated problems at the later date.

Methods

Setting

The study took place at Princess Alice Hospice, a 28-bed specialist palliative care unit in Surrey, England. All of the study participants were community-based patients.

Objectives

The primary objective was to assess the effectiveness of hypnotherapy in the management of anxiety in palliative care patients. Secondary objectives were to ascertain whether hypno- therapy could enhance sleep quality and quantity, reduce frequency of sleep disturbances, and reduce the severity of cancer-related depression and other psychological and physical symptoms.

Outcome measures

The statistician involved at the developmental stage of the project suggested primary and

secondary outcome measures for the study. The primary outcome measure was a reduction in anxiety scores of at least 20% as measured on the Hospital Anxiety and Depression Scale (HADS) (Zigmond and Snaith, 1983). The HADS is a well-validated self-assessment tool used to detect anxiety and depression. It consists of two subscales, one for anxiety and one for depression, each containing seven questions. Participants provide ratings on a scale from 0 to 3, with 3 indicating greatest distress.

Secondary outcome measures were a decrease in other cancer-related symptoms of at least three points on two self-report tools: the Edmonton Symptom Assessment System (ESAS) (Nekolaichuk et al, 2008) and the Verran and Snyder-Halpern Scale (VSH) (Snyder-Halpern and Verran, 1987). The ESAS is a short and practical tool for the assessment of pain, nau- sea, tiredness, appetite, anxiety, depression, drowsiness, shortness of breath, and general wellbeing. It is well validated (Nekolaichuk et al, 2008; Richardson and Jones, 2009) and is widely used in palliative care (Cummings et al, 2010). The VSH is a subjective measure of sleep quality that has been tested in a number of populations including patients with advanced cancer (Soden et al, 2004). Here it was used to assess the impact of the interven- tion on sleep quality, sleep quantity, and number of sleep disturbances.

Objective sleep data was obtained through non-invasive monitoring of activity using a wrist actigraph (the Actiwatch, Cambridge Neurotechnology Ltd). This is a wristwatch-sized electronic device that measures and records movement over time in the form of activity counts (Berger et al, 2008). Actigraphy estimates of sleep correlate at approximately 90% agree- ment with polysomnography, the gold standard for detecting specific sleep and wake states (Kushida et al, 2001). Actigraphy has previously been used within the cancer population although it is subject to methodological differences and awaits thorough validation in this population (Berger et al, 2008).

Hypnotherapy intervention

The study participants received four sessions of hypnotherapy, reflecting current practice for anx- ious patients at Princess Alice Hospice. During the four hypnotherapy sessions the same hypno- therapist, who has over 8 years experience and is a Member of the British Society of Clinical Hypnosis, used standardized hypnosis tech- niques. Each session started with a discussion with the patient about their concerns and how

Table 1. Actigraphy parameters	
Parameter	**Definition**
Number of sleep bouts	The number of episodes of sleep. Good quality sleep is indicated by a lower number of sleep bouts (i.e. long uninterrupted periods) and poor quality sleep is reflected by a higher number of sleep bouts.
Actual sleep percent	The percentage of the sleep period spent asleep as calculated by the software's algorithm.
Fragmentation index	A proven and very good indicator of disrupted or restless sleep. A fragmentation index of >50 is considered poor.
Moving percent	The proportion of time spent moving during the period from sleep start to sleep end. The higher this value the more disrupted the sleep.

hypnotherapy treatment might help him/her and then continued as outlined below.

First session: self-hypnosis
At each session, induction of hypnotherapy trance was achieved using eye fixation and progressive relaxation. In trance, the patient was taught how to access and use positive self-suggestion.

Second session: visualization
This technique involved helping the patient to perceive a troubling symptom as an external entity and to manage it as if it were a physical reality. Intrusive and negative thoughts may also have been addressed through visualization.

Third session: install an anchor
The patient was taught to use an 'anchor' to access a preferred mental state. This involved recalling a positive memory and linking this with a physical trigger, e.g. a finger pinch. The physi- cal trigger was then used by the patient at will when they were faced with a difficult situation or emotion.

Fourth session: immune system visualization
This process aimed to enable the patient to visualize his/her immune system in a dynamic way, in the hope of consciously enhancing the immune process. It is a tool to enhance the individual's sense of control over their disease process.

All patients were brought out of trance in a controlled manner and reorientated to their current environment. The order of these techniques may have been altered depending on the patient's particular issues and needs. All treatments were tailored to the individual.

Determination of sample size
Advice on the sample size needed for the study was sought from the statistician. Assuming that a change of three units between pre- and post-

intervention would be achieved, and also assuming that between individuals the standard deviation of change in the score would also be three units, a sample of 10 patients would achieve 85% power and a sample of 13 patients would achieve 90% power with P=0.05.

Patient participation
Participants had to have a diagnosis of cancer with an estimated prognosis of at least 10 weeks and had to be able to identify themselves and be identified by the multidisciplinary team as being anxious. They needed to be able to provide consent and complete questionnaires and assessments written in English, be over 18 years of age, and be able to travel to Princess Alice Hospice for hypnotherapy clinic appoint- ments or able to have hypnotherapy sessions at home. Patients were excluded if they had primary or secondary brain tumours; had a previous history of mental illness, such as suicidal tendencies, long-term clinical depres- sion, bipolar disorder, schizophrenia, psychotic illness, or dementia; or required community psychiatric nurse involvement.

Data collection
The participants were asked to complete the HADS, VSH, and ESAS questionnaires on entry to the study and after the second and last hypno- therapy sessions. Prescribed medication and interventions such as social worker involvement or counselling that may have affected anxiety levels were also documented on entry and on completion of the study. The participants' satisfaction with their treatment was also assessed using a patient satisfaction survey that is in regular use at the hospice.

Actigraphy was recorded continuously on the non-dominant wrist for five consecutive nights pre- hypnotherapy and five nights after the final hypnotherapy session. Instructions

After the fourth hypnotherapy session there was a statistically significant reduction in the means of all four patient-reported outcome measures: anxiety, depression, symptom severity, and sleep disturbance.

for wearing the actigraph were provided, and patients were asked to record when they went to sleep—that is, when they switched off the lights—and when they woke up. The four parameters considered to be valid indicators of sleep quality that were selected are shown in *Table 1*.

Data analysis
The subjective assessments of anxiety (HADS), depression (HADS), other symptoms (ESAS), and quality of sleep (VSH) were analysed to identify any longitudinal differences between assessments. Data analysis was descriptive in nature. Data were analyzed using Statistical Analysis Software (SAS, SAS Institute Inc). A repeated measures analysis was carried out for each assessment indi- vidually using a mixed effects linear model (see note under *Table 2* for a detailed description of analysis methodology).

The Actiwatch Activity and Sleep Analysis software (version 5.42) was used to analyse the actigraphy data for each night of sleep. The software's validated algorithm was used to calculate automatically the sleep, wake, and activity parameters, providing mean

behav- ioural activity for each night. The mean of each of the 5-day periods was calculated, giving a pre- and post-intervention result for each variable. The pre- and post-intervention means for each variable for each patient were compared using a t-test.

Ethical considerations

The study protocol was reviewed by members of the Princess Alice Hospice Research Committee, the Princess Alice Hospice Clinical Issues Committee, the South East Coast–Surrey NHS Local Research Ethics Committee, and the Surrey Clinical Research Centre at the University of Surrey. As evidence suggests that in some patients hypnotherapy may cause psychological distress (Medd, 1999; Gruzelier, 2000), the Hospice Social Work Team was available to support patients should the need arise.

Results

Demographic and patient factors

Twenty one patients with a diagnosis of cancer were entered into the study and 11 patients (3 male, 8 female, median age 60, age range 46–80) fully completed the intervention. Attrition was due to two unexpected patient deaths, five patients withdrawing due to signifi- cant deterioration of their underlying condition, and three patients deciding to withdraw. Of the latter, only one gave a reason (increased

nausea—the patient was receiving palliative chemotherapy). No additional complementary therapies were undertaken during the study by patients who completed the intervention, and no new medication was introduced during the study period. However, changes to medication were made: one patient increased his analgesia, five patients reduced or stopped previous analgesia, two reduced anxiolytics, one stopped a course of corticosteroids, and one stopped night sedation. One patient's medication was unchanged.

Questionnaire assessments

After the second hypnotherapy session there was a statistically significant reduction in mean patient-reported anxiety and other symptoms compared with pre-intervention anxiety and other symptoms, as measured by the HADS (*Figure 1*) and the ESAS (*Figure 2*) respectively. At this point there was also a reduction in mean patient-reported depression and sleep disturbance as measured by the HADS (*Figure 1*) and VSH respectively (*Figure 3*), but these were not statistically significant. After the fourth hypnotherapy session there was a statis- tically significant reduction in the means of all four patient-reported outcome measures: anxi- ety, depression, symptom severity, and sleep disturbance (*Figures 1–3*; *Table 2*). The patient satisfaction survey indicated that five of the eleven patients found the hypnotherapy sessions very enjoyable and the remaining six found them enjoyable. Eight of the patients found them very helpful and the remaining three found them helpful.

Actigraphy

There was no statistically significant difference in the mean of any of the sleep variables from pre- to post-intervention, indicating that as a whole group the patients' sleep did not change in a systematic way. However, looking at the 5-day mean values of the pre- and post-inter- vention data for each patient individually, it can be seen that some patients' sleep had improved post-intervention (*Figure 4*). This appeared to be the case for five of the eleven patients. In particular, three patients showed an improvement from pre-intervention to post- intervention on all four of the selected parame- ters. These patients showed an increase in the proportion of the sleep period spent asleep (increased actual sleep percent), longer uninter- rupted periods of sleep (decreased number of sleep bouts), a reduction in restless sleep (reduced fragmentation index), and less movement during

the whole sleep period (reduced moving time percent). Two patients showed improvement on three of the four parameters. Four of these five patients rated their treatment very helpful on the satisfaction survey.
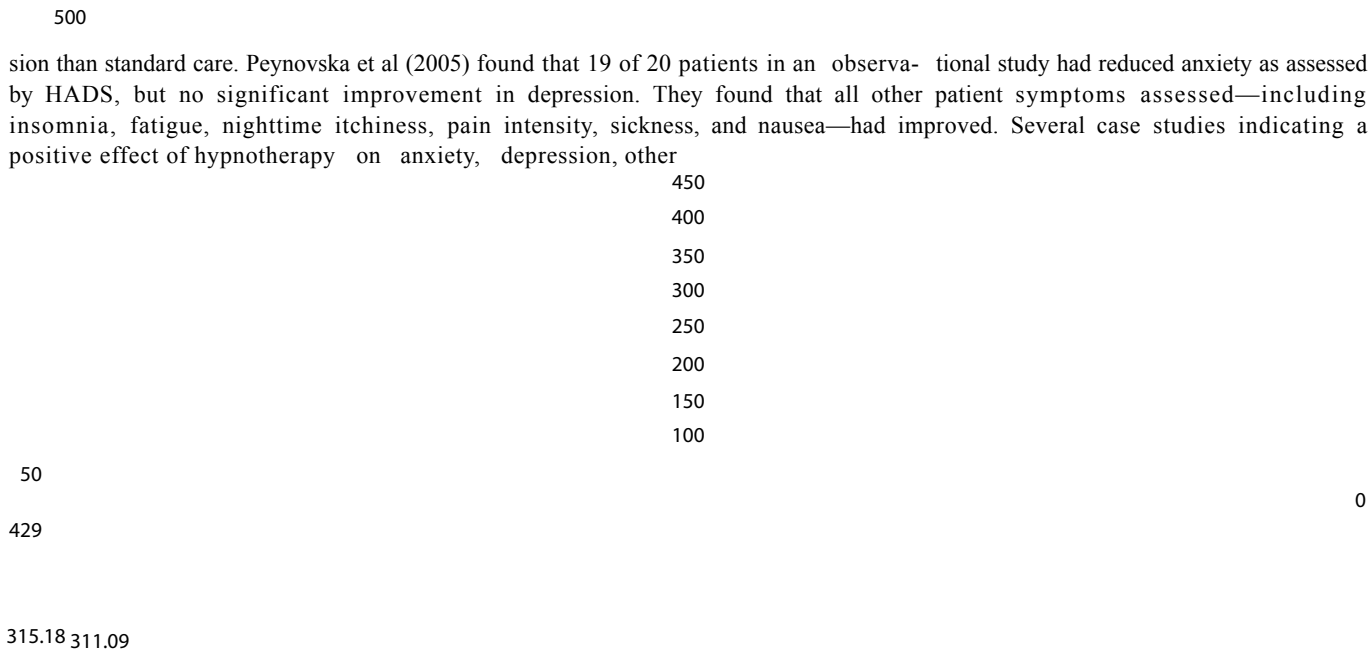
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Discussion

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This study found a significant reduction in levels of anxiety and other troublesome symptoms after the completion of only two hypnotherapy sessions. A significant reduction in depression and an increase in sleep quality were also seen after completion of four hypno-

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therapy sessions. These results are in keeping with those of other studies. Liossi and White

Assessment 1

Assessment 2

(2001) demonstrated that hypnotherapy resulted in decreased anxiety and improved sleep with minimal adverse effects. Their pro- spective randomized controlled trial involving

50 terminally ill cancer patients found that hypnotherapy produced a significantly greater improvement in scores of anxiety and   depres-

Figure 1. Mean Hospital Anxiety and Depression (HADS) results (n=11)

500

sion than standard care. Peynovska et al (2005) found that 19 of 20 patients in an observa- tional study had reduced anxiety as assessed by HADS, but no significant improvement in depression. They found that all other patient symptoms assessed—including insomnia, fatigue, nighttime itchiness, pain intensity, sickness, and nausea—had improved. Several case studies indicating a positive effect of hypnotherapy   on   anxiety,   depression, other

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Assessment 1

Assessment 2

Assessment 3

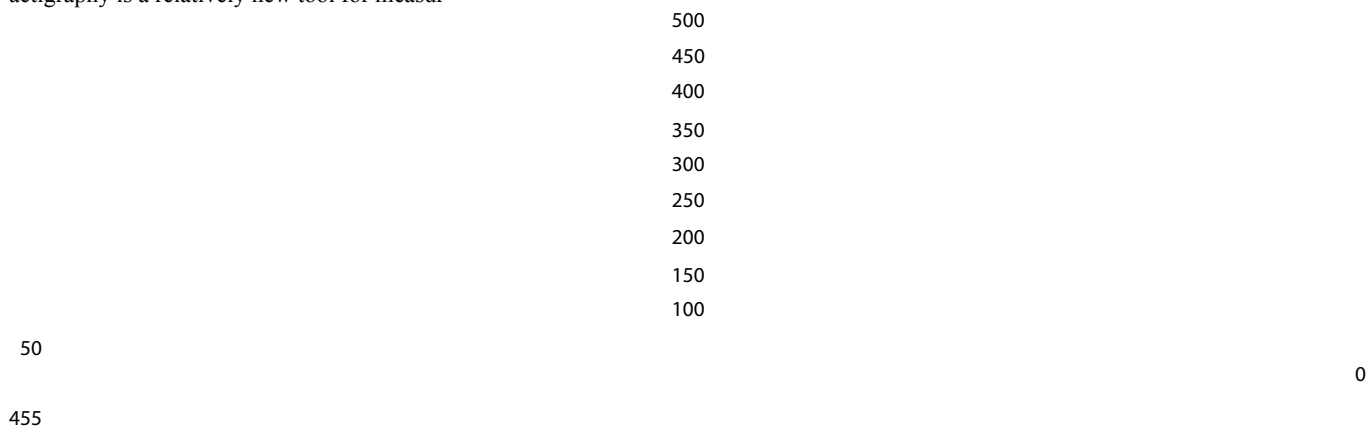symptoms, and sleep have also been published (Kraft, 1990; Iglesias, 2004).

It is interesting that in the present study the patients' symptom severity appeared to improve after the second hypnotherapy session, and that similar results have also been reported else- where. As it is unlikely that the actual symptoms the   patients were   experiencing changed due to the intervention, it is more likely that it was

Patient-reported symptom severity

Figure 2. Mean Edmonton Symptom Assessment System (ESAS) results (n=11)

their perception that was altered in some way, causing them to rate their symptoms with less severity. This change in perception has potential further implications as it may also alter the way   in which patients use concurrent treatments, possibly reducing the need for medication and the risk of side effects.

Unlike the VSH sleep scale, actigraphy did not show an improvement in sleep quality. This inconsistency could be due to the fact that actigraphy is a relatively new tool for measur-

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Assessment 1

Assessment 2

Assessment 3

ing the quality of sleep in patients with advanced cancer: its validation is still in progress and thus the sleep indicators that should be used are still a subject of debate. Hypnotherapy as an intervention appears to be

Sleep disturbance

Figure 3. Mean Verran and Snyder-Halpern Scale (VSH) results (n=11)

Table 2. Summary of *P* values for the outcome measures				
Variable	t(10)	After second hypnotherapy	t(10)	After fourth hypnotherapy
Anxiety using HADS	-3.18	*P*=0.0066**	-4.73	*P*=0.0016**
Depression using HADS	-1.36	*P*=0.2910	-2.82	*P*=0.0466*
Sleep disturbance using VSH	-83.55	*P*=0.0868	-164.45	*P*=0.0081**
Symptoms using ESAS	-114.36	*P*=0.0094**	-117.91	*P*=0.0329*
No test multiplicity significance level adjustment was made to the reported *P* values. The separate data for each type of outcome measurement (anxiety, depression, sleep disturbance, and symptoms), consisting for each subject of the pre- treatment measurement, the post second hypnotherapy session measurement and the post fourth hypnotherapy ses- sion measurement, were submitted as dependent variables to a mixed effects linear model using SAS PROC MIXED, with the explanatory variable being the measurement occasion, with 3 levels, as a repeated measure with the unstruc- tured variance-covariance matrix option. ESAS, Edmonton Symptom Assessment System, HADS, Hospital Anxiety and Depression Scale; VSH, Verran and Snyder-Halpern Scale. *Significant; **Highly significant.				

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acceptable to patients as expressed by the patient satisfaction survey.

Strengths and limitations

The study was subject to difficulties of recruit- ment and high attrition. Those patients who withdrew are deemed to have done so not

Before   After   Before   After   Before   After   Before   After

because of any direct effect of the hypno- therapy but rather because of the natural course of their illness. The majority of the evidence for short-lived unwanted effects of hypnosis was generated in experimental and entertainment settings with healthy subjects and is of limited relevance in a palliative care setting (Gruzelier, 2000). The number of patients who ultimately completed the inter- vention was small but proved to be adequate for statistical analysis; however, a between- groups comparison study would require a greater number of participants. Although it is accepted that in advanced cancer levels of anxiety, depression, ability to sleep, and symptomatology are heavily influenced by the location of the patient in their illness trajectory and their rate of progression, at the point of consent all participants were well enough to travel to the hospice and had an estimated prognosis of at least 10 weeks.

Biasing factors were minimized where possible. The same hypnotherapist carried out all treatments and the same research nurse assisted participants with the completion of the questionnaires and recorded all interventions, such as changes in medication and oncological treatments that may have affected anxiety. Patient use of other hospice supportive services such as psychosocial support could not be eliminated but was limited in extent. It is rec- ognized that there may be other potential con- founding variables such as general clinical

Number of sleep bouts

Actual sleep (percent)

Fragmentation index

Moving time (percent)

deterioration, patients liking or disliking the therapist or the research nurse and therefore giving biased answers, and the act of caregiv- ing itself making it difficult to isolate the effect

Figure 4. Actigraphy results for those individual patients who appeared to experience improvements

of hypnotherapy alone. The risk of answers being affected by patients liking or disliking

the therapist or research nurse could not be eliminated, but the use of actigraphy as an additional outcome measure should have flagged up

any cause for concern, at least regarding the sleep quality results. The study used under-validated measurement tools, but use of concurrent scales to improve accuracy was not practical and would have been burdensome to the participants.

Conclusion and recommendations

This pilot study set out to explore a broad question relating to the effect of hypnotherapy on the management of anxiety and other symptoms. It offers preliminary evidence that hypnotherapy may be able to sustain a reduc- tion in anxiety in palliative care patients, with the added benefit of improving sleep and the severity of psychological and physical symp- toms. Further studies are needed to explore the number of hypnotherapy sessions that are required to reduce anxiety for a given period of time and which palliative care patients would most benefit from hypnotherapy, with an emphasis on minimizing bias and confounding factors. Standardization of an accepted hypno- therapy model is also needed. This may allow hypnotherapy to become a practical clinical tool to aid in the management of anxiety. Even though none of the participants in the present study required referral for psychosocial inter- vention as a direct result of the study, safety precautions will have to be taken when setting up new studies owing to the lack of evidence regarding the side effects of hypnosis in the palliative care setting. IJPN

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