

The efficacy of hypnosis in changing the quality of life in patients with dementia: A pilot-study evaluation.

Simon C. Duff, PhD

Division of Clinical Psychology, University of Liverpool, Liverpool, L69 3GB.

Daniel J. Nightingale, PhD

Highfield Care, Heywood Court Centre, Heywood, Rochdale, OL10 1NQ.

Abstract: A pilot study concerned with influencing the quality of life of elderly, residential and nursing home patients with dementia through hypnosis looked at changes across seven variables over a 9 month period. Three groups of patients were compared, a 'treatment-as-usual' control group, a discussion group and patients receiving hypnosis. Across each of the seven variables the hypnosis group showed the largest improvement, which was also sustained over the 9 month period of the study. The discussion group showed little improvement, but were stable over this period of time and the control group showed a small decline across all measures. Overall, the hypnosis group showed a statistically significant improvement from baseline on the assessed measures of quality of life. We discuss possible explanations for these findings.

Keywords: Hypnosis, dementia, quality of life

Acknowledgements: We would like to thank the managers and staff of Knowsley Manor and Moss View residential and nursing homes for their assistance in this project, and for the senior managers of Highfield Care.

Corresponding author: Simon C. Duff

Division of Clinical Psychology, University of Liverpool, Liverpool, L69 3GB.

email: duff@liverpool.ac.uk

tel: 0151 794 5538

Introduction

The National Service Framework for Older People (Dept. of Health, 2001) presents eight standards of healthcare provision including “person-centred care”. With regards to dementia this approach endorses the importance of enabling an individual to fulfil their potential and remain a social being despite declining capabilities. Such person-centred care is considered to involve more than just physical care (Kitwood, 1993) and for patients with dementia, individual emotional and psychological needs may well take precedence over physical needs (Lindesay et al., 1991). Largely this is due to the recognition that the clinical presentation of patients with dementia is influenced by the patient’s social environment and perhaps more importantly, their internal personal environment (Kitwood & Bredin, 1992), i.e., how the patient’s understanding of their social environment and their ability to interact successfully within it will influence their behaviour. As Kitwood (1997) states, dementia care involves empowering individuals and promoting inter-personal relationships.

The therapeutic use of hypnosis is by its very nature person-centred as it is defined, guided, induced, and maintained through an understanding of the individual’s phenomenological world, as it is in the present, has been in the past, and how they would like it to be. The potential role of hypnosis in person-centred care approaches is perhaps best highlighted by its inclusion as a therapy where there is a desire for a “mind-body-spirit philosophy (not merely treating symptoms)” (Berman, 2003) and for similar reasons as an adjunct therapy with what are often referred to as conventional therapeutic approaches. Research has demonstrated that hypnosis on its own can play a role in changing quality of life, for example in patients receiving painful medical treatments (e.g., Lioffa & Hatira, 2003). Lioffi (Lioffi & White 2001) also reports that hypnosis produces greater changes in perceived quality of life, and reduced anxiety and depression in patients terminally ill with cancer when compared to patients receiving standard care. When hypnosis is coupled with other forms of intervention, for example CBT (e.g., Kirsch, Montgomery, & Sapirstein, 1995) or anaesthetic (e.g., Faymonville, Meurisse, & Fissette, 1999) it enhances the effectiveness of the

original treatment and again directly impacts upon the patient’s quality of life. This increasing body of empirical evidence for the efficacy of hypnosis and our greater understanding of the neural mechanisms through which these effects are mediated (e.g., Faymonville, Laureys, Degueldre, Del Fiore, Luxen, Franck, Lamy, & Maquet, 2000) is suitably advanced for theorists to genuinely consider the use of hypnosis as a primary tool in the arsenal for improving the quality of life of a range of patients hitherto considered to be outside the possible remit of hypnosis. For example, Witz and Kahn (1991) describe two cases where hypnosis was used as an intervention with two patients suffering from Huntingdon’s Disease. They describe how hypnotic techniques reduced both physical and psychological symptoms and thereby improved quality of life for these patients.

The crucial question regarding the use of hypnosis for improving quality of life is whether those patients who might benefit from improvements in quality of life have the cognitive and neural capacity to be hypnotised. Spiegel and Spiegel (1978) have suggested that the abilities to concentrate and attend for a sustained period of time are necessary for successful hypnosis, implying that patients with impairments in these abilities might not be suitable. As Simon and Canonico (2001) point out, this belief has limited the range of populations on which research has been carried out. They looked at the use of hypnosis in reducing distress in a patient with dementia who was also needle phobic and required lumbar punctures. They report success in reducing the anxiety of this patient whose intellectual functioning was “determined to be significantly lower than her premorbid estimate” (Simon and Canonico, 2001, p. 60).

Although the above study looked at a single case it is suggestive that despite the warnings of Spiegel and Spiegel (1978) patients with dementia may well be hypnotisable. An earlier project carried out by Welden and Yesavage (1982) provides further support for the usefulness of hypnotic techniques with this population. Twenty-four matched pairs of patients with dementia attended either a relaxation-training group or a current affairs discussion group for an hour three times a week over a 3 month period. Relaxation instructions included progressive muscle relaxation and a self-hyp-

nosis technique. Patients learning self-hypnosis showed improvement on ratings of behavioural function compared with the control group and additionally just over 40% no longer were in need of sleeping medication, whereas none of the control group was able to discontinue using their sleep medication.

The literature suggests that hypnosis can have positive effects on quality of life for a range of patients and that patients with dementia can experience hypnosis. The following pilot project sought to determine if hypnosis could positively influence the quality of life of patients with dementia and thus play a part in the newly developing person-centred approach aimed at caring for patients with dementia. The possible use of hypnosis for improving the quality of life in patients with dementia is part of an on-going process to develop services that would have a positive impact on residential and nursing home residents with dementia.

Method

For many individuals it is relatively simple to measure changes in quality of life. Pre- and post-intervention measures can look at levels of anxiety, depression, ratings of phobia and pain etc. This is not necessarily the case for patients who are quite advanced in the dementing process. Often speech production is reduced and the degree of concentration necessary to fill out questionnaires is no longer routinely available. With this in mind, and recalling Kitwood's (1997) view that dementia care involves empowering individuals and promoting inter-personal relationships, a set of measures for tracking important aspects of quality of life for patients in residential and nursing homes, with dementia, was developed based on the earlier work of Kitwood (1993; 1997).

This consisted of 7 areas in which positive change would have a noticeable impact upon the quality of life of patients.

1. Concentration - on even the simplest of tasks this can be difficult for somebody with dementia.
2. Relaxation - anxiety is the most common behavioural presentation in dementia.
3. Motivation - Many people with dementia lose the ability to self-motivate, possibly through experiencing a form of pseudo-depression. This can lead to weight loss, loss

of muscle tone, constipation and a range of other physical and psychological disorders.

4. Activities of Daily Living (ADLs) – for example getting up, getting in and out of the bath, walking to the lounge, drinking, eating, etc. The gradual loss of these abilities leads to a reduction in independence.

5. Immediate memory - immediate memory loss is pertinent to the majority of dementias.

6. Memory for Significant life events - many people will remember very significant life events for a period of time throughout the dementing process however there are often gaps in these memories which can cause patients further anxiety.

7. Socialisation – patients may isolate themselves from others and interaction and socialisation become limited.

For each of the 7 items patients were rated on a 7-point Likert scale (see appendix A), assessed once at the start of the study period, and then at 3-monthly intervals. To ensure that any changes were not due to the immediate effects of either discussion or hypnosis, these assessments were made two days before the next weekly session was due. This also reduces the likelihood that any measured changes were due to some form of effect of anticipation. One of the authors (DJN) wrote a Project Direct Care Staff Guide which was used to train and support nursing staff in scoring individual patients on each of the 7 scales. This provided a method to reduce any bias that the authors might inadvertently impose on the evaluations of patients during the study, and allowed as far as possible within the constraints of the care-home environment for the raters to be blind to the groups into which individual patients had been assigned.

Participants

Participants were randomly allocated into one of three groups, the hypnosis group, the discussion group and the treatment as usual group. Due to the exploratory nature of the research and the time demands of repeated weekly sessions of hypnosis for large numbers of participants only 6 participants were assigned to each group. The criteria for acceptance onto the project were (a) the ability to comprehend

the aims of treatment, (b) the ability to give consent prior to each weekly session, (c) a baseline score of 4-5 on the Global Deterioration Scale (GDS, Reisberg, Ferris, de Leon, & Crook, 1982) which equates to a moderate or moderately severe cognitive decline, (d) the absence of co-morbid medical conditions that would preclude the individual from receiving therapy, and (e) the absence of any medication that would contra-indicate hypnotherapy. Potential participants in the hypnosis and discussion groups were informed that they were free to withdraw at any time (thus the decision to repeat requests for consent before each session) and that their decision to participate, or withdraw at a later stage, would have no effect on their treatment or care.

The hypnosis participants received weekly, individual hypnosis, carried out in their own, single occupancy bedrooms at their residential or nursing home by one of the authors (DJN). Hypnosis sessions were weekly, each lasting approximately one hour. Thus over the three month period each participant received twelve sessions.

The participants consisted of 4 males and 2 females and had a mean age of 77.2 years (sd = 2.48). Of these, 4 participants had a diagnosis of vascular dementia, one of Parkinson's disease related dementia, and one of dementia. Prior to the first hypnosis session each participant received an initial consultation and interview to customise the terminology used during the sessions so that it was familiar for each participant and to ensure that they were able to comprehend the kinds of suggestions that were intended to be used. Participants were also introduced to progressive muscle relaxation (PMR) to ensure that they were able to engage in this process.

The procedure involved obtaining consent for hypnosis before each session, followed by induction via PMR. The therapeutic stage allowed participants to listen to suggestions made through the use of direct suggestion, relating to the 7 key areas, along with additional CRC suggestions (Calmness, Relaxation, and Confidence). Hypnosis sessions initially lasted approximately one hour and the exact details of these sessions follow.

Hypnosis

Inductions performed at every session began with eye closure through the use of fixed gaze at a point on the ceiling followed by PMR, starting at the scalp and progressing toward the feet. This preceded a permissive induction, an example of which is given below.

And as your muscles relax completely, let every last feeling of tension leave your body and let your body drift down and let yourself become completely relaxed and free of any tension or any worries. This will be a soothing, comfortable, pleasant, safe and relaxed feeling. As it is such a soothing, comfortable, pleasant, and safe feeling you will enter the deepest and most relaxed state that you have ever experienced.

Subsequently the session moved on to the deepening procedure. Four of the six hypnosis participants received a deepener based on them choosing a forest scene, a part of which is presented below.

I want you to imagine stepping outside of your room and entering a big, bright open forest. As you do so, you can feel the golden leaves as they crunch beneath your feet. With each step that you take, with each breath that you take, with each word that I speak, you feel more and more relaxed. Deeper into the forest you walk, deeper into relaxation you go. As you walk, you see to your left, rabbits playing, running in and out of their burrows, playing, having fun, enjoying a sense of safety, security and wellbeing. As you continue to walk deeper into the forest, you feel even more deeply relaxed. You see to your right squirrels as they search for food finding the inner strength to climb the trees and enjoy their home, their food and their companions. You feel the warmth from the sun as its hot rays break through the branches of the trees overhead. You take a deep breath and smell the pine from the trees, the scent from the flowers and you to feel a sense of happiness, safety and security. As you continue to walk, you see a small hill ahead. Approaching the hill you see the most beautiful stag you have ever seen in your life. He is standing proud looking down on his forest. You reach the foot of the hill and gaze directly into the eyes of this beautiful creature. He is communicating with you. He is thinking with you. His eyes

and thoughts are filled with clarity. He remembers you. He will always remember you. You and he are at one. You have never felt so relaxed, self-assured and confident.

On concluding the deepening part of the processes the next stage was to invoke an ideomotor response (IMR) from the participant. Our interest in using IMR was three-fold, firstly to ensure that the participants had not merely fallen asleep, secondly to have a quick measure of level of hypnosis, and thirdly to check that participants were prepared to move on to the intervention stage. Using IMR as an indirect measure of level of hypnosis is not without precedent as it is used as one of the measures of hypnotisability on many standard scales (e.g., The Harvard Group Scale of Hypnotic Susceptibility: Form A (HGSHS:A), Shor & Orne, 1962; Hypnotic Induction Scale (HIP), Spiegel & Spiegel, 1978) and this approach reduces the amount of time required during the hypnotic procedure which is potentially crucial in a participant group such as this. Although further examinations of depth of hypnosis might have been possible it is not known, nor was the intention of this research to find out, the potential effects of, for example, positive kinaesthetic hallucinations, negative visual hallucinations or post-hypnotic suggestions on individuals with dementia. The IMR invoked involved the first finger of the non-dominant hand being raised firstly to the suggestion that the finger was feeling lighter and that it was rising without any conscious effort. Subsequently the first finger of the dominant hand was used to indicate if the participant was ready to go onto the intervention stage of the procedure.

The intervention stage consisted of direct suggestion presented in an authoritarian format. An example is presented below.

At the end of this session, and between now and the next time I see you, you will feel more relaxed and at ease, more motivated to do the things you want to do; you will have clarity of thought; you will be able to concentrate for longer periods of time; you will have fewer concerns and less feelings of anxiousness. You will realize that being motivated increases your quality of life; Food will have more meaning and importance to you, and because of this, you will want to taste food

and you will enjoy food, all the food you once enjoyed, you will remember the taste, touch, texture and smell of these foods; spending time with others will have meaning and you will want to spend time chatting with others and going out with others and you will discover that this will increase your quality of life in all the ways that you want it to.

Termination of the session involved removal of the IMR, and reversal of the deepener so that participants visualised themselves gradually and slowly walking back out of the forest with the suggestion that they would retain the feelings of calmness, relaxation and confidence for as long as they wanted. Finally they were re-oriented with respect to time and place and asked to report any side effects to the therapist.

The discussion group discussed issues based around current affairs which included both issues on a wider national and international scale and their own in-house political and social concerns and debates. This group was run by the Activities Co-ordinator (A/C) employed full-time by the residential or nursing home and included patients who were not involved in the research as another method to increase the likelihood of blind ratings of change on the 7 measures. A solid therapeutic alliance was established between the A/C and the group members prior to the group meetings and all members were encouraged to participate. The research group within this discussion group consisted of two males and four females, with a mean age of 79.7 years (sd = 8.78). Of these three had a diagnosis of vascular dementia and three of dementia. The discussion group met weekly for one hour.

The 'treatment as usual' group received the standard treatment from residential and nursing home staff of meeting the basic care needs of the individuals in that group. Thus, the two experimental groups differed from this control group by having one hour each week of extra input, either through discussion or hypnosis. The control group, all female, had a mean age of 79.8 years (sd = 3.00), 3 diagnosed with dementia, two with vascular dementia, and one with Parkinson's Disease related dementia.

Results

The results for each of the seven key areas of change are presented graphically (see Graphs 1-7). Each graph shows the mean change from baseline for each of the groups. Using a measure of change from baseline allows the groups to be compared to one another. However, this also means that the scores on the graphs do not equate to ratings but to the direction and magnitude of change. These means are based on the subjective assessments of trained nursing staff and as such it is possible that the scoring criteria used by different staff members were slightly different. In order to address this issue a random sample of measures were double scored by a second member of staff in order to measure inter-rater reliability. Approximately 5% of the total numbers of scores, across all groups and all times, were double scored, giving a Cronbach's Alpha of 0.68.

Figure 1 presents the change in rated levels of concentration for the 3 groups showing that over the 9 month period of the study the group receiving hypnosis demonstrate an increase in observer-rated levels of concentration.

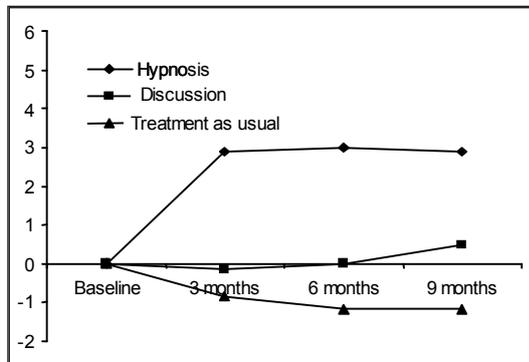


Figure 1. Changes from baseline on measure of concentration, over a 9 month period, for the hypnosis, discussion, and treatment as usual groups.

Figure 2 presents the change in observer-rated relaxation for the three groups indicating that the group receiving hypnosis were rated as more relaxed over the 9 month period, whereas the other 2 groups were rated as either remaining similarly relaxed throughout the study period or, in the case of the treatment as usual group, being rated as less relaxed.

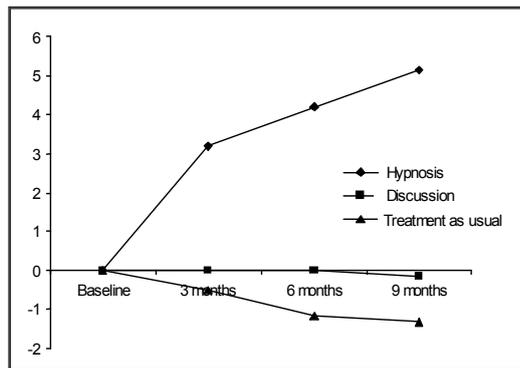


Figure 2. Changes from baseline on measure of relaxation, over a 9 month period, for the hypnosis, discussion, and treatment as usual groups.

Figure 3 presents the observer-rated change in motivation during the study period, showing that the hypnosis group were rated as increased in motivation, whereas the treatment as usual group were rated as less motivated.

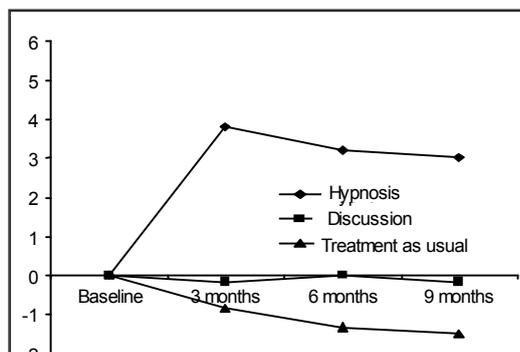


Figure 3. Changes from baseline on measure of motivation, over a 9 month period, for the hypnosis, discussion, and treatment as usual groups.

Figure 4 presents the observer ratings for activities of daily living, indicating that the hypnosis group were rated as showing greater improvement in engagement with these kinds of activities over the other two groups.

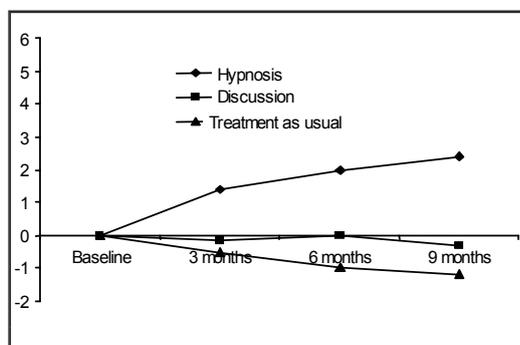


Figure 4. Changes from baseline on measure of activities of daily living, over a 9 month period, for the hypnosis, discussion, and treatment as usual groups.

Figure 5 presents the observer ratings for the three groups on immediate memory over the 9 month period. The hypnosis group show an overall and sustained improvement, the discussion group show an improvement at the end of the study whereas the treatment as usual group show a slight decrease in rated immediate memory.

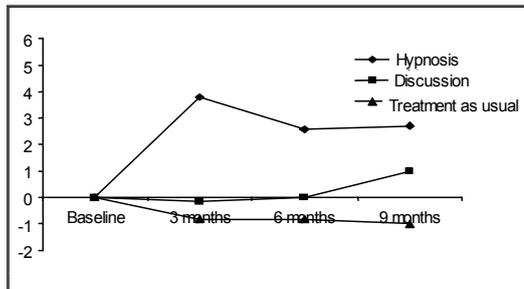


Figure 5. Changes from baseline on measure of immediate memory, over a 9 month period, for the hypnosis, discussion, and treatment as usual groups.

Figure 6 presents the observer ratings for memory for significant events for each of the three groups. The hypnosis group show an increase and maintenance in rated memory for significant events, the discussion group participants remaining stable and the treatment as usual group showing a small decline.

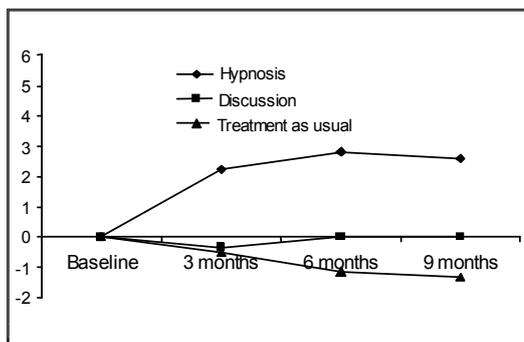


Figure 6. Changes from baseline on measure of memory for significant events, over a 9 month period, for the hypnosis, discussion, and treatment as usual groups.

Figure 7 shows the observer ratings for socialisation for each of the three groups. The hypnosis group show gradually increasing levels of rated socialisation over the study period, the discussion group maintaining their baseline level and the treatment as usual group showing a slight decline.

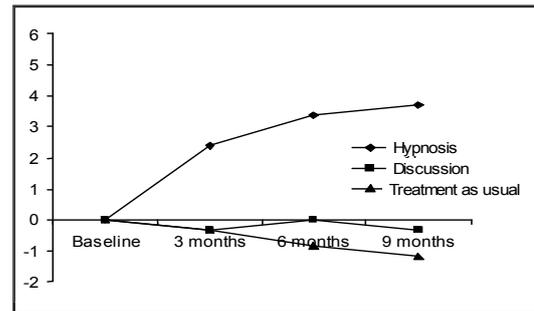


Figure 7. Changes from baseline on measure of socialisation, over a 9 month period, for the hypnosis, discussion, and treatment as usual groups.

The overall pattern of the data for each of the 7 measures is quite clear. Over a 9 month period the patients who attended the discussion group are relatively stable throughout the assessment period. The group who receive treatment as usual show a small negative change over the assessment period. The group who received hypnosis show an overall increase on each of the 7 measures. As the 7 measures were considered to be important contributors to quality of life, mean change for each group, collapsing over the seven measures, was calculated for each of the 3 post-baseline times to provide an overall measure of change in quality of life. Analysis of variance carried out on this data found a statistically significant difference between groups ($F(1,14) = 18.38, p < 0.05$) which post-hoc analysis using Tukey's HSD showed was due to a greater change in quality of life from baseline for the hypnosis group than changes in the quality of life of the other two groups ($p < 0.001$), the other two groups not differing. It should be noted that the difference between the discussion and treatment-as-usual group approached significance ($p = 0.053$), where quality of life was greater for the discussion group.

There is debate within the social sciences as to the use of statistical tests and recent work (e.g., Zimmerman & Zumbo, 1993) has demonstrated that many of our assumptions regarding the different circumstances in which we should use parametric and non-parametric tests do not hold. Although these authors suggest that parametric tests are robust enough to handle the data we have collected, to ensure that our data are fairly represented we have also carried out a non-parametric equivalent of ANOVA,

the Kruskal-Wallis test. The calculated value of H is 11.5, and the critical value of $X^2 = 10.6$ for $p < 0.005$ indicating again that there are statistically significant differences among the 3 treatments. In order to determine where the significance lies we carried out 3 Mann-Whitney U tests, correcting the critical level of α to 0.0167 (0.05/3). Ratings of overall change in patient quality of life for the treatment as usual and discussion groups produces a Mann-Whitney U of 5.5 ($z = -2.06$) with an associated two-tailed probability of 0.041 suggesting that these groups do not differ. Similar comparisons between the treatment as usual and hypnosis groups (Mann Whitney U = 0.00 ($z = -2.76$), $p = 0.004$), and the discussion and hypnosis groups (Mann Whitney U = 1.00 ($z = -2.62$), $p = 0.009$) indicate that the rated change in patient quality of life is greater for the hypnosis group than the other two groups.

The greatest change for the hypnosis group occurs on the measure of relaxation, followed by motivation, concentration and socialisation. Of the 7 measures these might be considered more indirect measures of dementia, which contribute more directly to quality of life. The remaining 3 measures, immediate recall, memory for significant events, and the performance of activities of daily living may be considered more direct measures of dementia.

Discussion

The data from this study firstly supports the work of Simon and Canonico (2001) that in certain cases patients with dementia can be hypnotised. This is suggested by the fact that when patients with dementia are given instructions to relax during the hypnotic process they are evidently able to do so, and that they can respond to IMR instructions. Further, it adds to the increasing corpus of empirical results demonstrating the important contribution hypnosis can make in improving the quality of life of different kinds of patients. It is important to differentiate between improving the quality of life of patients with dementia and curing or halting the dementing process. We are not suggesting that hypnosis can do the latter, however the fact that it has clear results in changing quality of life suggests that there is a subjectively cognitive component to behavioural change in dementia, over and above those changes pro-

duced by the dementing process itself. We hypothesise that it is through this additional cognitive component that hypnosis is able to have an effect; specifically we differentiate between the objective, biological effects of dementia and the subjective, psychological effects.

The changes in mental function associated with dementia could be thought of in terms of cognitive capacity, that is that we naturally have limited cognitive resources and it is this that limits our performance under, for example, dual task conditions (e.g., Duff & Logie, 2001). Biological changes associated with dementia are responsible for the objective changes in cognitive abilities, behaviour etc by reducing the resources available for cognitive tasks. Further changes in abilities and behaviour can be thought of as due to the subjective awareness of changes in, for example, memory for people, places etc. We suggest that the subjective awareness of the gradual loss of ability produces anxiety and depression, which are known to involve active cognitive processing (e.g., Teasdale & Barnard, 1994), acting to further reduce the available capacity of patients with dementia, resulting in an even greater loss of ability (memory, motivation etc) than is due to the biological processes alone. This is because cognitive resources are utilised in the maintenance of the anxious and depressed moods. By decreasing anxiety and depression through positive suggestion and relaxation whilst under hypnosis we are, in effect, freeing up these otherwise engaged resources so that they are available for other cognitive tasks, such as concentration, memory, and socialisation.

The fact that these same positive changes are not produced (either at all, or to the same extent) by engaging patients in activities is not surprising, based on this view, as activities such as 'discussion' are having to compete with the 'tasks' of depression and anxiety. Activities such as discussion groups may have short term benefits if changes were measured during the discussion group but in the longer term patients are more likely to be concerned with changes in their personal abilities than in other activities.

There are a variety of issues with a study such as this, the majority of which we have highlighted. For example, as mentioned previously,

the ratings were subjective, and there is the added difficulty of having matched groups to compare. Further we are comparing small numbers of participants, with a variety of diagnoses. Most unfortunate for a study with a patient group such as this, the ability to take a more longitudinal perspective and monitor change in the hypnosis group post-treatment is complicated by the mortality of the participants.

Notwithstanding this limitation we are continuing to monitor the 3 groups in order to determine whether hypnosis has a long-term effect on quality of life or whether in this group of individuals we need to see it as having a maintenance role. At this point in time monitoring is still being undertaken and we consider the issue of maintenance or long-term change as being a separate empirical issue.

However we suggest that this work provides a good basis for further work to uncover the limits of using hypnosis to improve the quality of life of patients with dementia, and to develop a more detailed understanding of how hypnosis is acting to produce these changes.

References

- Berman, B. (2003). Integrative approaches to pain management: How to get the best of both worlds. *British Medical Journal*, 326, 1320-1322.
- Department of Health. (2001). *National Service Framework for older people*. London, Stationery Office.
- Duff, S.C. & Logie, R.H. (2001). Processing and storage in working memory span. *Quarterly Journal of Experimental Psychology A*, 54 (1), 31-48.
- Faymonville, M.E., Laureys, S., Degueldre, C., Del Fiore, G., Luxen, A., Franck, G., Lamy, M., & Maquet, P. (2000). Neural mechanisms of antinociceptive effects of hypnosis. *Anesthesiology*, 92 (5), 1257-1267.
- Faymonville, M.E., Meurisse, M., & Fissette, J. (1999). Hypnosedation: a valuable alternative to traditional anaesthetic techniques. *Acta Chir. Belgica*, 99, 141-146.
- Kirsch, I., Montgomery, G., & Sapirstein, G. (1996). Hypnosis as an adjunct to cognitive-behavioral psychotherapy: A meta-analysis. *Journal of Consulting and Clinical Psychology*, 64 (3), 513-516.
- Kitwood, T. (1993). Towards a theory of dementia care: The interpersonal process. *Ageing and Society*, 13, 51-67.
- Kitwood, T. (1997). *Evaluating dementia care: The DC method*. 7th Edition.
- Bradford Dementia Group, University of Bradford.
- Kitwood, T. & Bredin, K. (1992). Towards a theory of dementia care: Personhood and wellbeing. *Ageing and Society*, 12, 269-287.
- Lindesay, J., Briggs, K., Lawes, M., MacDonald, A., & Herzberg, J. (1991). The domus philosophy: A comparative evaluation of a new approach to residential care for the demented elderly. *International Journal of Geriatric Psychiatry*, 6, 727-736.
- Lioffi, C. & White, P. (2001). Efficacy of clinical hypnosis in the enhancement of quality of life of terminally ill cancer patients. *Contemporary Hypnosis*, 18 (2), 145-160.
- Lioffi, C. & Hatira, P. (2003). Clinical hypnosis in the alleviation of procedure-related pain in pediatric oncology patients. *The International Journal of Clinical and Experimental Hypnosis*, 51 (1), 4-28.
- Reisberg, B., Ferris, S.H., de Leon, M.J., and Crook, T. (1982). The Global Deterioration Scale for assessment of primary degenerative dementia. *American Journal of Psychiatry*, 139, 1136-1139.
- Simon, E.P. & Canonico, M.M. (2001). Use of hypnosis in controlling lumbar puncture distress in an adult needle-phobic dementia patient. *The International Journal of Clinical and Experimental Hypnosis*, 49 (1), 56-67.
- Shor, R.E., & Orne, E.C. (1962). *Harvard Group Scale of Hypnotic Susceptibility Scale: Form A*. Palo Alto: Consulting Psychologists Press.
- Spiegel, H., & Spiegel, D. (1978). *Trance and treatment: Clinical uses of hypnosis*. New York: Basic Books.
- Teasdale, J.D. & Barnard, P.J. (1994). *Affect, cognition and change: Re-modelling depressive thought*. Hove: Lawrence Erlbaum Associates.
- Welden, S. & Yesavage, J.A. (1982). Behavioural improvement with relocation training in senile dementia. *Clinical Gerontology*, 1, 45-49.
- Witz, M., & Kahn, S. (1991). Hypnosis and the treatment of Huntington's disease. *American Journal of Clinical Hypnosis*, 34(2), 79-90.
- Zimmerman, D.W & Zumbo, B.D. (1993). The relative power of parametric and nonparametric statistical methods. In G. Keren & C. Lewis (eds.), *A handbook for data analysis in the behavioral sciences: Methodological issues*, Hillsdale: Lawrence Erlbaum Associates.

Appendix A

The Likert scale: a format for survey questions where respondents are asked to rate the level at which they agree or disagree with a give statement, or to rate the extent to which a particular concept is experienced. Typically they are 7-point scales. The particular scales that we used, which were in a Likert format, were as follows:

1	2	3	4	5	6	7
Relaxed						Agitated
1	2	3	4	5	6	7
Calm						Aggressive
1	2	3	4	5	6	7
Happy						Sad
1	2	3	4	5	6	7
Good concentration						Poor concentration
1	2	3	4	5	6	7
Peaceful						Tense
1	2	3	4	5	6	7
Good appetite						Poor appetite
1	2	3	4	5	6	7
Good sleep pattern						Poor sleep pattern
1	2	3	4	5	6	7
Motivated						Not motivated
1	2	3	4	5	6	7
Good immediate memory						Poor immediate memory
1	2	3	4	5	6	7
Good long term memory						Poor long term memory