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Effects of attention training on hypochondriasis: a brief case series

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ABSTRACT

Background. Empirical evidence indicates that manipulations of attention may facilitate changes in cognition and stress symptoms in emotional disorder.

Methods. The present study reports the effects of Attention Training (ATT) in a brief case series of three patients with primary hypochondriasis using an A–B–A design.

Results. ATT produced clinically significant improvements in self-reported measures of affect, and illness-related behaviour and cognition. Treatment gains were maintained at 6 months follow-up assessments. Measures of body-focused attention indicated that the ATT procedure acted on attentional processes as intended.

Conclusions. The present case series extends the effects of ATT to problems of hypochondriasis. A number of studies now suggest that ATT is associated with a reduction in anxiety and negative beliefs across disorders of panic, social phobia and hypochondriasis. Controlled clinical trials are now required to establish firmly the effects of ATT as a component of cognitive therapy.

INTRODUCTION

The central feature of hypochondriasis is 'preoccupation with fears of having, or the idea that one has, a serious disease based on a misinterpretation of one or more bodily signs or symptoms'; this 'preoccupation persists despite appropriate medical evaluation and reassurance' (DSM-IV; American Psychiatric Association, 1994). Hypochondriasis is a common problem in a variety of clinical settings (Kellner, 1986; Mabe *et al*. 1988) and among older adult populations (Blazer & Houpt, 1979; Swartz *et al*. 1989). Primary hypochondriasis is considered to be a disorder resistant to psychological interventions and with poor prognosis (Barsky & Klerman, 1983).

From a cognitive–behavioural perspective, several formulations have been advanced to account for the development and maintenance of hypochondriasis. Bersky and colleagues (Barsky, 1979; Barsky & Klerman, 1983; Barsky & Wyshak, 1990) proposed that hypochondriasis can be understood as a 'perceptual disorder' in which somatosensory amplification is a key feature. Somatosensory amplification is a tendency to experience bodily and visceral sensations as intense, noxious and disturbing. It consists of heightened attentional focus on bodily sensations, selective focus on weak and infrequent bodily sensations, and a tendency to misinterpret these as evidence of illness. In Warwick & Salkovskis' (1990) cognitive–behavioural conceptualization of hypochondriasis, the problem is maintained by misinterpretation of bodily signs and symptoms, and associated behaviours such as reassurance seeking, bodily checking, avoidance, heightened bodily focus and selective attention to illness-related information. These responses maintain health preoccupation and interfere with disconfirmation of negative beliefs.

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Cognitive–behavioural treatments of hypochondriasis are in an early stage of development. Nevertheless, results of uncontrolled trials (Stern & Fernandez, 1991; Avia *et al.* 1996), and controlled evaluations (Warwick *et al.* 1996) indicate that cognitive–behavioural interventions are effective.

Cognitive–behavioural models of hypochondriasis have emphasized the role of heightened bodily focused attention in problem maintenance. However, few direct attempts to modify dysfunctional attentional strategies have been used in treatment; the focus has predominantly been on challenging the validity of the content of illness-related appraisals and beliefs (see Wells, 1997).

In a different line of research on vulnerability to emotional disorder, Wells & Matthews (1994, 1996*a*, *b*) suggest that dysfunctional self-focused tendencies constitute a marker for a cognitive–attentional syndrome underlying emotional disorder. Attentional strategies are intimately bound up with negative appraisals and beliefs. However, changing specific beliefs may be insufficient in modifying general attentional strategies. For instance, Ehlers (1993) showed that heightened interoceptive awareness, in the form of residual cardiac awareness, predicted relapse following cognitive–behavioural treatment of panic disorder. Wells & Matthews (1994, 1996*a*, *b*) propose that modification of attention should produce synchronous changes in associated appraisals and belief modalities.

One attention modification procedure, Attention Training (ATT), appears to lead to decrements in anxiety and changes in belief in cases of panic disorder and social phobia (Wells, 1990; Wells *et al.* 1997). ATT consists of regular practice of external auditory attention exercise (i.e. selective attention, attention switching, and divided attention) aimed at diminishing self-focus and increasing the meta-cognitive control of attention. ATT is not intended as a distraction from anxious thoughts and symptoms, but it is intended to facilitate the 'switching off' of perseverative self-focused processing. In this sense, it should be useful in the treatment of hypochondriasis, which is characterized by repetitive health rumination and inflexible body-focused attention. We predicted that ATT should decrease anxious health preoccupation and negative beliefs. This study reports data on the application of ATT in three cases of primary hypochondriasis.

METHOD

Patients

Three patients who had been consecutively referred for psychological treatment of somatoform disorders were included in the case series. All patients satisfied DSM-III-R (American Psychiatric Association, 1987) criteria for primary hypochondriasis as operationalized by the Structured Clinical Interview for DSM-III-R – Patient Edition (SCID-P; Spitzer *et al.* 1990). None of the patients fulfilled criteria for concurrent Axis I disorders. Patients had not received any previous psychological treatments for hypochondriasis or other disorders and were not taking psychotropic medication.

Patient 1

Patient 1 was a 65-year-old woman who presented with hypochondriasis that had persisted for 35 years. She also suffered from arthritis. Morbid preoccupation with her health developed following the unexpected death of her daughter, who died from breast cancer; an event that the patient mainly attributed to medical mismanagement. Numerous physical examinations, prompted by her requests, showed no significant abnormality. Despite this reassurance, the patient became increasingly convinced that she had breast cancer, frequently sought reassurance from friends, physicians and help lines, constantly checked her breasts and avoided watching TV or reading articles regarding cancer or women's health. The problem led to significant impairments in life-style and emotional functioning.

Patient 2

Patient 2 was a 73-year-old woman who presented with hypochondriasis of 20 years duration. She also suffered from arthritis and unilateral deafness. After the sudden death of her husband, who died from a myocardial infarction, she became preoccupied with her health, exhibiting several symptoms, particularly tightness in the chest and tachycardia. Although various physical examinations revealed no organic pathology, she persisted in attributing the causes of her symptoms to a heart disease, frequently sought reassurance from family and physicians, engaged in repetitive checking of her pulse, and avoided pro-

longed physical exertion. She also experienced images in which she visualized herself being buried alive. These behaviours led to a substantial impairment in social and emotional functioning.

Patient 3

Patient 3 was a 71-year-old woman who presented with hypochondriasis of 11 years duration. She also had problems of sciatica and arthritis. Preoccupation with her health developed during a high incidence of illnesses and deaths in her family, particularly her husband's stroke. Hypochondriacal fears did not emerge until she experienced recurrent headaches and dizziness of which physical examinations revealed no organic basis. Although the patient was given medical reassurance, she continued to believe that she was suffering from a brain disease that could lead to stroke. She spent much of her time seeking reassurance from neighbours and physicians, checking her blood pressure, avoiding thinking and talking about disease and avoiding visiting friends in hospital. The patient experienced images in which she visualized herself being taken to hospital and dying from a 'massive' stroke before arrival. She also complained of low mood due to her health concerns.

Experimental design

In order to assess the effectiveness of ATT on hypochondriasis, a brief A–B–A case series was used in which patients acted as their own control and were asked to discontinue the practise of ATT after its implementation, during the follow-up period. Individual baselines were extended until stable trends in outcome measures (health worry, illness beliefs, reassurance seeking, avoidance and bodily checking) were observable. This produced baselines of 3 (patient 1), 4 (patient 2), and 5 (patient 3) weeks. Patients then received ten (patient 1), nine (patient 2), and eight (patient 3) sessions of ATT. In total, 13 weeks were allocated to each patient for baseline and treatment. Follow-up assessments were conducted at 3 and 6 months.

Since our principal aim was to evaluate the impact of ATT alone, during initial assessment we asked patients not to change the extent of their exposure to anxiety-provoking situations, but to behave in the way they were accustomed to behaving. Similarly, we did not ask patients to reduce their reassurance seeking behaviours and bodily checking, despite the possibility that the latter could act against attempts to reduce self-focus. We elected to measure the frequency of such behaviours to determine any ATT effects. Treatment sessions were restricted to the discussion and practice of ATT, and discussion of the content of patients' fears was avoided. No other cognitive–behavioural strategies, apart from ATT, were used.

Measures

Affective (*BAL*, *GDS*)

At the beginning of each session and at follow-up, patients completed the Beck Anxiety Inventory (BAI; Beck *et al*. 1988) and the Geriatric Depression Scale (GDS; Yesavage *et al*. 1983).

Cognitive (*health worry*, *illness beliefs*, *SSAS*)

Patients were instructed to complete 0–100 Visual Analogue Scales (VASs) measuring frequency of health worry and idiosyncratic illness belief. The item used to assess health worry was as follows: 'How much of the time have you spent worrying about your health in the past week?'. The anchor points on this scale were: 0 'none of the time' and 100 'all of the time'. The item used to assess illness beliefs was as follows: 'In the past week how much have you believed that you have (idiosyncratic belief) when anxious about your health?'. The anchor points on this scale were : 0 'do not believe this at all' and 100 'completely convinced this is true'. The following idiosyncratic illness beliefs were rated: 'breast cancer' (patient 1); 'heart disease' (patient 2); 'serious brain condition' (patient 3). The above measures were administered at the beginning of each session and at 3 and 6 months follow-up assessments. Patients also completed the Somatosensory Amplification Scale (SSAS; Barsky *et al*. 1990) at pre-treatment, post-treatment and follow-up.

Illness-related behaviour (*reassurance seeking*, *avoidance*, *bodily checking*)

Patients completed two 0–100 VASs assessing frequency of: (1) urge to seek reassurance; and (2) illness-related avoidance behaviours. The item used to assess urge to seek reassurance was as follows: 'How often have you needed to seek reassurance about your health from your doctor, family, friends or others in the past week?' The item used to assess avoidance was as follows:

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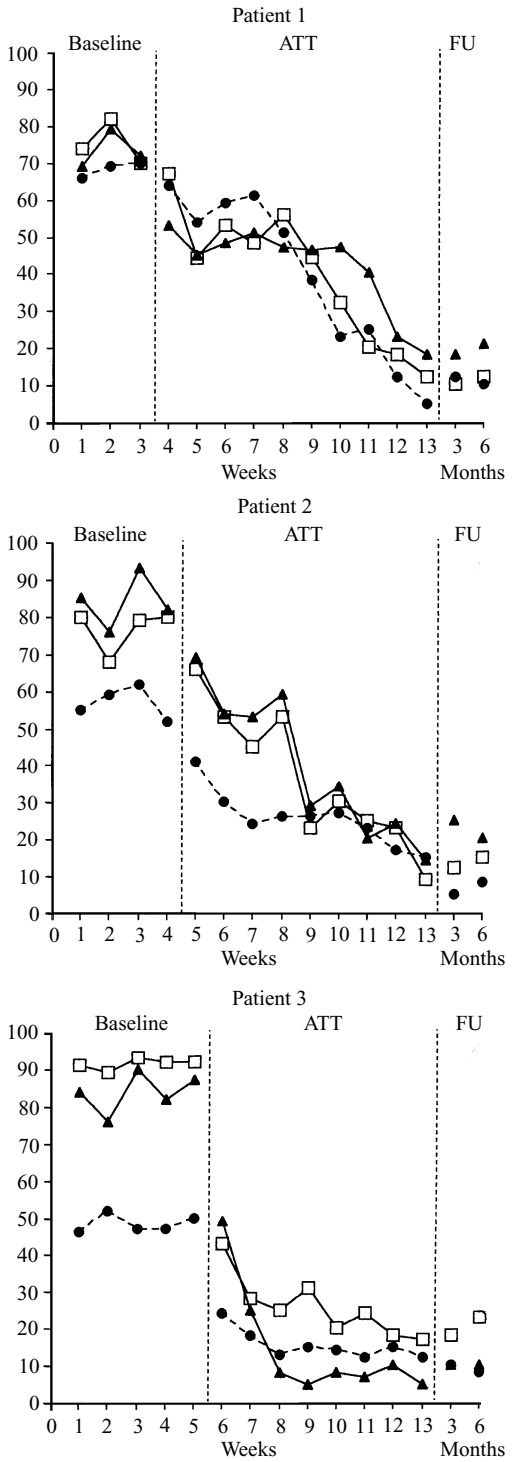

'How much of the time have you avoided (idiosyncratic avoidance behaviours) in the past week?' The anchor points on these scales were: 0 'none of the time' and 100 'all of the time'. Patients also completed a 0–5 Likert rating scale of frequency of bodily checking. The item used to assess bodily checking was as follows: 'How often have you checked (idiosyncratic bodily checking behaviours) for signs of physical illness/disease in the past week?' On this scale, 0 was 0 times per week, 1 was 1–5, 2 was 6–10, 3 was 11–15, 4 was 16–20, and 5 was over 21. For graphical purposes, this measure was converted into a 0–100 rating scale. Illness-related behaviour measures were administered at the beginning of each session and at 3 and 6 months follow-up assessments.

Manipulation-check (*body-focus*)

Since heightened self-focused attention was hypothesized to be the central agent responsible for problem maintenance and a primary mechanism of change, a 0–100 VAS rating of the degree of body-focused attention served as a manipulation-check measure. The item used to assess body-focused attention was as follows: 'How conscious of your body have you felt in the past week?'. The anchor points on this scale were: 0 'not at all conscious of my body' and 100 'completely conscious of my body, I could not be more so'. This measure was administered at the beginning of each session and at 3 and 6 months follow-up assessments.

Procedure

Following assessment and respective baseline periods, ATT was introduced. Implementation of ATT was conducted by the first author who had received training in the use of the procedure (for a full account of ATT see Wells, 1990).

The first treatment session consisted of presentation of the rationale for ATT in conjunction with an illustrated idiosyncratic vicious circle model of the patients' hypochondriasis. This session was the longest, lasting for approximately 60 min. All three patients were provided with the same ATT rationale. The rationale for

FIG. 1. Ratings of frequency of health worry (□—□), illness beliefs (●– – –●), and degree of body-focused attention (▲—▲) (manipulation-check measure) for relevant patients before, during and after ATT.

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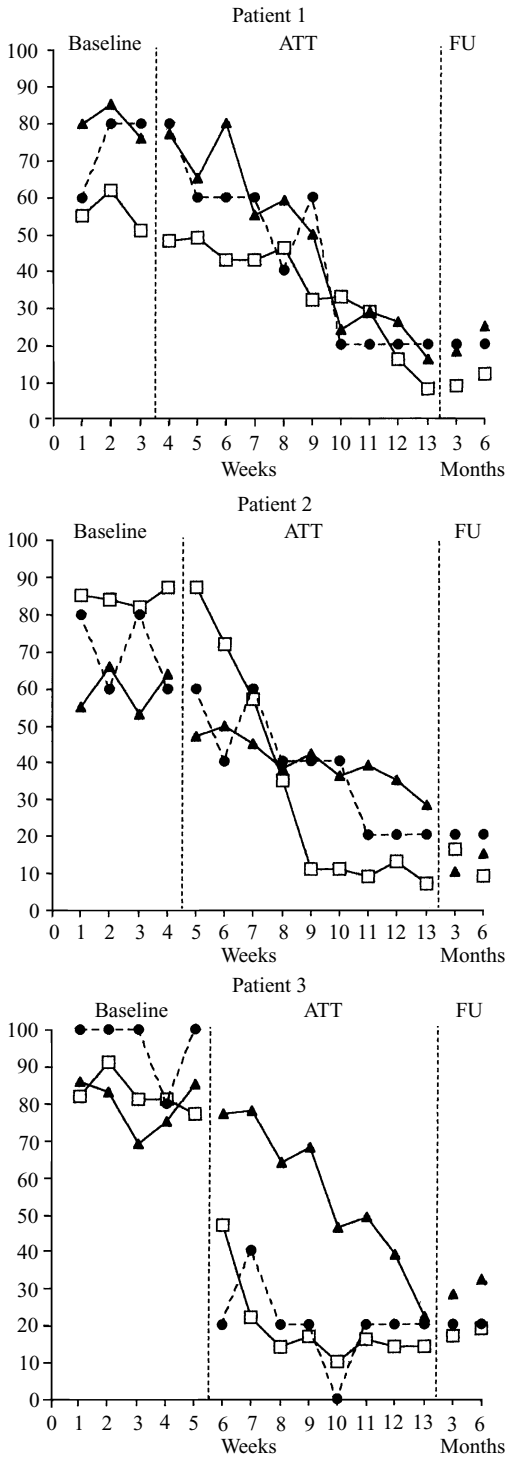

ATT emphasized the role of heightened body-focused attention in the development and maintenance of hypochondriasis as follows: 'People tend to become anxious about their health for several reasons. For example, someone close to them may become ill or die, or having personal symptoms can increase preoccupation with health and your body. Once health anxiety develops, it can be difficult to turn your attention away from monitoring your body, and you may focus more on your symptoms in order to make sure "bad" things do not happen, or things do not get worse. However, focusing your attention in this way and becoming preoccupied with your symptoms and your body has a number of negative consequences. First, it can intensify normal bodily sensations. Secondly, it increases your sensitivity to noticing bodily sensations. Thirdly, it maintains worry about your health. It is normal for everyone to experience new symptoms from time to time. If, however, you become preoccupied with them, this can cause problems. In order to help you overcome your health anxiety, it is useful to reduce your body awareness. This can be done by practising a technique called Attention Training. This technique is not intended to distract you from anxiety. It is designed to increase your control over attention, and allow you to develop more accurate beliefs about your physical symptoms'. For each patient, the above rationale was illustrated by a demonstration of the potential effects of body-focused attention on bodily misinterpretation tendencies as follows: 'Focus your attention on your fingertips. Concentrate on all of the sensations there. What sensations do you notice? You probably notice sensations that you did not notice before. These sensations are normal but by focusing your attention you have become more aware of them. If you thought that such sensations were a sign of serious physical illness you would become anxious and more preoccupied with them'.

Subsequent treatment sessions were of approximately 30 min duration and consisted of completion of self-report measures, review of ATT homework practise, and further practise of

FIG. 2. Ratings of frequency of urge to seek reassurance (□—□), avoidance behaviours (▲—▲) and bodily checking (●---●) for relevant patients before, during and after ATT.

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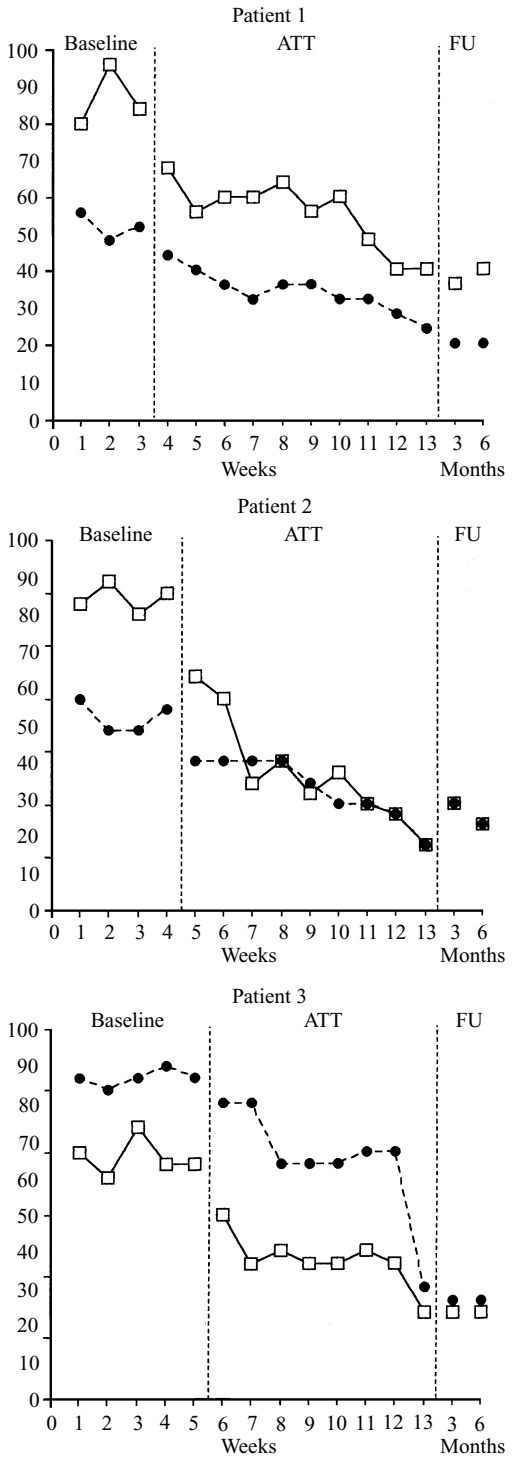

FIG. 3. BAI (□—□) and GDS (●---●) ratings for relevant patients before, during and after ATT.

ATT in session (approximately 15 min). Upon completion of each session, patients were asked to practise ATT at home for 15–20 min twice a day, when they were not experiencing anxiety. The structure of each session was consistent across time and patients. Following completion of treatment, patients were asked to stop practising ATT.

RESULTS

Baseline, treatment and follow-up data for all three cases are presented in Figs. 1–4. By comparing baseline scores with those obtained during treatment and following the withdrawal of treatment (i.e. follow-up), the effects of ATT can be estimated. These data indicate that in the three cases treated here, ATT produced clinically significant improvements on self-reported measures of affect, cognition, illness-related behaviours and somatosensory amplification. The effects of the intervention were maintained over 6 months following withdrawal of ATT. Although patients reported that they had discontinued the use of ATT over this time, we cannot entirely rule out the possibility that they continued the use of the procedure. Re-administration of the SCID-P at post-treatment, and 3 and 6 months follow-up assessments revealed that none of the patients satisfied DSM-III-R criteria for hypochondriasis at these time points.

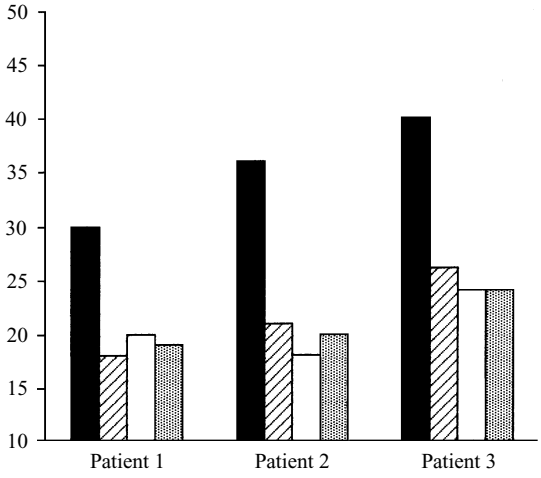

FIG. 4. Somatosensory Amplification Scale (SSAS) ratings for relevant patients at pre-treatment (■), post-treatment (▨), and 3 (□) and 6 (▩) months follow-up assessments.

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ATT appears not only to have decreased worry and illness beliefs as predicted, but also there is an effect on self-report illness-related behaviour measures of reassurance seeking, avoidance, and bodily checking. The stability of treatment effects beyond 6 months remains to be established.

DISCUSSION

The results of the present study are consistent with previous findings (Wells, 1990; Wells *et al*. 1997) suggesting an active effect of ATT on anxiety disorders, and extend the findings to three cases of primary hypochondriasis. All patients demonstrated clinical improvements in self-reported measures of anxiety, mood, health worry, illness-related beliefs and behaviours. Following the intervention, none of the patients met criteria for DSM-III-R hypochondriasis. The results suggest that ATT led to decrements in body-focused attention as intended. Consistent with the results of an earlier study (Wells *et al*. 1997), this study showed an effect of ATT on beliefs. Several mechanisms have been proposed to account for this effect. For example, the procedure may provide a convincing alternative model for the patients' problems, and it may disrupt perseverative processing and hence free up resources for belief change (see Wells & Matthews, 1994; Wells *et al*. 1997).

ATT appears to have an effect across a range of disorders: panic, social phobia and hypochondriasis, as demonstrated in three separate experimental case studies. In each case the rationale for ATT was tailored to the specific disorder, but the procedure itself was used in its standard, unmodified form. Further studies may also dismantle the procedure and de-couple it from the rationale in an attempt to locate the active components. However, controlled clinical trials are now required to establish firmly the effects of ATT as a component of cognitive therapy.

A limitation of the present study was the use only of self-report measures of behaviour. Overt behavioural outcome data such as number of visits and phone calls to physicians would be helpful in validating ATT effects. In addition, the time frame in which patients completed the various VASs restricted valid and reliable measurement of the variables in question – VASs were given at a single point in time and patients were asked to average over time. Future studies should use daily records of central hypochondriacal variables. Finally, the generalizability of the present findings is limited by the specific patient group – a small older adult sample.

In summary, brief attention manipulations appear promising for the potentiation of cognitive-behavioural change across a range of disorders. If, as Wells & Matthews (1994, 1996*a*, *b*) suggest, emotional disorder is linked to a general dysfunctional cognitive–attentional syndrome, modification of attentional processing configurations is likely to provide a pathway to the restructuring of maladaptive self-knowledge.

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