

THE EFFECTS OF RELAXATION WITH AND WITHOUT IMAGERY IN REDUCING ANXIETY AND ITCHY SKIN IN PATIENTS WITH ECZEMA

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Abstract. Eczema is a skin condition with a multifaceted aetiology that includes both psychological and physiological components. A number of studies have indicated that cognitive-behavioural techniques (e.g. relaxation) are effective in the treatment of atopic eczema. However, it remains unclear from the literature whether different relaxation techniques have comparable treatment effects. The current study compared the efficacy of a single relaxation session with an imagery component with that of a comparable relaxation session without the imagery component. Eczema patients ($n = 9$) who participated in relaxation with imagery reported significantly greater reductions in state anxiety and subjective ratings of itchiness and significantly greater increases in mental relaxation levels than eczema patients ($n = 9$) who participated in relaxation without the imagery component. No group differences were found on changes in state anger. These results suggest that relaxation with an imagery component may be more effective than relaxation without an imagery component in lowering state anxiety levels and itchy sensations of atopic eczema patients.

Keywords: Eczema, imagery, relaxation, therapy.

Introduction

Eczema is a debilitating skin condition with a prevalence of 7–24 people per 1000 and with a complex aetiology, including both genetic and psychological components

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(Ehlers, Stangier, & Gieler, 1995). The psychological components of eczema incorporate factors such as perpetuating maladaptive behaviours, the role of stressors (Horne, White, & Varigos, 1989) and emotions such as anger and anxiety (White, Horne, & Varigos, 1990). With a growing emphasis on the psychological aspect of the condition, standard pharmaceutical treatments may no longer be perceived as sufficient. A developing body of research is lending support to the efficacy of psychological treatments of eczema, including cognitive-behavioural therapy (CBT).

Recent accounts of CBT interventions for the treatment of eczema include self-monitoring (SM) of itchiness and scratching behaviours, of habit reversal (HR-Azrin & Nunn, 1973) and some form of relaxation, often also accompanied by training in problem solving, social skills and cognitive coping strategies (e.g. Horne et al., 1989; Al'Abadie, Kent, & Gawkrödger, 1994; Ehlers et al., 1995; Halford & Miller, 1992). All these studies report successful outcomes, with decreased scratching of skin and decreased eczema severity. Of course, other forms of psychological interventions have also been reported as producing successful results, including psychodynamic therapies (e.g., Koblenzer, 1986) and hypnosis (e.g., Sokel et al., 1993). However, what actually constitute the most effective components of treatment, and especially of effective CBT, has been little researched in the case of eczema. Horne, Borge and Varigos (1992) were able to demonstrate that HR alone and a combination of HR and SM were more effective treatments than simply using SM of eczema severity and scratching behaviours alone.

An important element of many psychological treatments for eczema, and other psychosomatic disorders, is relaxation (Gaston, Crombez, & Depius, 1989; Horne et al., 1989; Al'Abadie et al., 1994; Ehlers et al., 1995; Halford & Miller, 1992). There would appear to be a major belief, with considerable supporting evidence of the kind cited above, that relaxation is indeed an effective treatment for eczema. However, there are many forms of relaxation varying from Jacobson's classical progressive muscle relaxation (Jacobson, 1938) to relaxation incorporating various forms of suggestion, including autogenic suggestions such as those used by Ehlers et al. (1995) of the skin feeling "calm and pleasantly cool" or the "heart beats calmly" (p. 627), and patient self-induced relaxing imagery (e.g., Gaston et al., 1989; Horne et al., 1989); where patients are asked to generate their own imagery that they find relaxing. Imagery is a complex psychological process with a vast literature of theory and research but which is not appropriately reviewed here. However, it can be measured reliably using such instruments as the Questionnaire Upon Mental Imagery (Sheehan, 1967). Given the widely reported use of imagery in relaxation instructions for treating such disorders as eczema and the paucity of research on the effectiveness of the individual components of relaxation instructions in producing therapeutic benefits, it was decided to conduct a simple controlled experiment to compare the effects of relaxation with and without imagery, in a single session, in a group of eczema patients who had had no prior psychological or psychiatric treatments for their skin disorder.

Since anxiety and anger have been shown to be significant emotions associated with eczema and its exacerbations (e.g., Doherty, 1987; Jordon & Whitlock, 1974, White et al., 1990; Ginsburg, Prytowsky, Kornfeld, & Wolland, 1993), it was decided that these two variables would need to be assessed as both independent variables and as outcome variables.

Thus, it was predicted that patients having their first session of relaxation training, which incorporated instructions to produce and use self-generated imagery associated with feeling calm and relaxed, would show, immediately at the end of the relaxation session, greater reductions in sensations of itchiness, state-anxiety and state-anger levels than a matched group of patients having comparable relaxation instructions without imagery instructions.

Method

Participants

Eczema patients were referred to the study by dermatologists in the North Western Health Care Network of Melbourne. Twenty-three patients were referred: four patients did not keep their appointment and one failed to complete the study. The criteria for selecting patients were that they were diagnosed by a dermatologist as having chronic atopic eczema (more than a six month history) and had had no prior psychological or psychiatric treatment. No patient was having oral steroids but all were using emollients and/or topical steroid creams as part of their normal dermatological treatments.

Patients were allocated to the experimental group (relaxation with imagery instructions) and the control group (comparable relaxation instructions but without the imagery induction component) according to a predetermined random schedule.

The experimental group comprised of six females and three males with a mean age of 28.8 years ($SD = 10.1$) and the control group had five females and four males with a mean age of 32.4 years ($SD = 12.2$). There was no significant age difference between the two groups ($t(16) = 0.69$, ns).

Assessments

In order to assess perceived degree of skin itchiness, mental relaxation and physical relaxation three self-rating Visual Analogue Scales (VAS) were used. Each VAS scale consisted of a 10 centimetre line, with the maximum extreme of a dimension comprising the right end of the scale, and the minimum extreme the left end. Participants rated how they felt on the dimension by placing a vertical line across the scale somewhere between the two extremes. VAS have been shown to discriminate between groups, and the data may be used as interval level data. Research has also supported the re-test and inter-rater reliability of VAS (McCormack, Horne, & Sheather, 1988). The three visual analogue scales administered asked participants to rate how itchy their skin felt at this moment, how mentally relaxed they felt and how physically relaxed they felt right now.

State (S) and Trait (T) anxiety were also assessed using the well established State-Trait Anxiety Inventory (STAI, Form Y) of Spielberger, Gorsuch, Lushene, Vagg and Jacobs (1983). Anger was similarly assessed using Spielberger's (1988) State-Trait Anger Expression Inventory (STAXI). On both tests the state condition is assessed by asking participants to rate how they feel "at the moment" and trait condition by asking them how they "generally feel" on the relevant items.

The Questionnaire Upon Mental Imagery (QMI) (Sheehan, 1967) was also administered to all participants in order to control for the independent variable imaging ability.

Procedure

Testing was carried out on an individual basis and took place in a laboratory in the Royal Melbourne Hospital. Participants were tested from late autumn to late winter. Participants were first administered the STAI-Y, the STAXI and the three VAS. They were then invited to make themselves comfortable in a reclining chair. The experimenter then left the room and a standardized, 14 minute long, relaxation audio tape was played. Participants in the experimental relaxation with imagery group received relaxation instructions to focus on body sensations, identifying muscle tension progressively from their feet to their head, and the session concluded with suggestions about producing a relaxing “image” in any sensory modality they chose. Participants in the control relaxation without imagery group were administered comparable 14 minute relaxation instructions but with no instruction at all about producing any kind of imagery. At the conclusion of the exercise, the experimenter re-entered the room and re-administered the three VAS, STAI-Y and STAXI questionnaires. The Sheehan (1967) QMI was also administered for the first and only time at this point. It was not given earlier to avoid any suggestion of use of imagery to patients prior to having the relaxation instructions.

Patients in the non-imagery, control, group were also asked if they spontaneously generated imagery during the relaxation task; but not a single patient did. All patients in the experimental group were also asked to describe the image they produced after the relaxation tape. One patient had no imagery but had a high QMI score and was relaxed. Thus, he was included in the analysis of the results. All patients producing imagery used the visual sensory modality.

At the conclusion of the session, participants were given a copy of the relaxation audio tape they used to keep for their own use, and given the opportunity for CBT either in a small group or individually. Most patients did not avail themselves of this further opportunity.

Results

All statistical analyses were performed using SPSS 6.1, with significance levels set at 0.05 (one-tailed because of the prediction of direction of change). Results between group comparisons on the independent variables were as follows: QMI ($t(16) = 0.18$, ns); Trait Anxiety ($t(16) = 2.42$, $p = .028$); Trait Anger ($t(16) = 0.50$, ns); State Anxiety ($t(16) = 0.73$, ns); State Anger ($t(16) = 0.27$, ns). On the three VAS measures there were no significant between group differences prior to treatment, as follows: itchiness ($t(16) = 0.61$, ns); mental relaxation ($t(16) = 0.05$, ns); physical relaxation ($t(16) = 0.18$, ns). Thus, the imagery experimental group had significantly higher Trait Anxiety (STAI-T Mean = 50.56, SD 8.00) than the non-imagery control group (Mean = 41.44, SD 7.96) but on all other pre-treatment measures there were no between group differences.

Table 1. Mean and standard deviation scores for experimental (imagery) and control (no imagery) groups

| | | Experimental/imagery group (<i>n</i> = 9) | | | Control/no imagery group (<i>n</i> = 9) | | | <i>T</i> (16) on diff. scores | <i>p</i> (one-tail) |
|---------------------------|-----------|---|------|-------|---|------|-------|-------------------------------------|------------------------|
| | | Pre | Post | Diff. | Pre | Post | Diff. | | |
| VAS measures: | | | | | | | | | |
| (i) Itchiness | Mean | 25.0 | 18.1 | -6.9 | 21.7 | 29.2 | +7.5* | 2.48 | 0.01 |
| | <i>SD</i> | 12.2 | 15.1 | 14.2 | 14.9 | 20.0 | 10.2 | — | — |
| (ii) Mental relaxation | Mean | 53.1 | 73.9 | +20.8 | 52.4 | 60.1 | +7.7 | 2.02 | 0.03 |
| | <i>SD</i> | 28.3 | 25.2 | 15.9 | 26.1 | 25.2 | 11.3 | — | — |
| (iii) Physical relaxation | Mean | 51.4 | 71.6 | +20.2 | 49.2 | 62.0 | +12.8 | 0.03 | 0.18 |
| | <i>SD</i> | 30.1 | 29.5 | 16.9 | 23.1 | 24.1 | 15.3 | — | — |
| State anxiety (STAI-S) | Mean | 41.4 | 29.1 | -12.3 | 38.6 | 33.2 | -5.4 | 1.85 | 0.04 |
| | <i>SD</i> | 8.8 | 8.6 | 9.8 | 8.1 | 7.0 | 5.8 | — | — |
| State anger (STAXI-S) | Mean | 10.4 | 11.0 | +0.6 | 11.2 | 10.7 | -0.5 | 0.00 | ns |
| | <i>SD</i> | 0.9 | 2.0 | 1.1 | 1.5 | 1.1 | 1.0 | — | — |

*For VAS itchiness, a minus equals a decrease and therefore improvement.

In order to check whether Trait Anxiety significantly influenced the results it was covaried using ANCOVA with each of the dependent variables where a significant experimental (treatment) effect occurred. No significant effects were found on difference scores for itchiness, $p = .84$; mental relaxation, $p = .42$ and physical relaxation, $p = .42$).

Because of the small size of the groups, the fact that the experimental group had higher initial *T* anxiety levels, and that the study was a pilot, analogue study, the examination of the main treatment effects was carried out on the difference scores between the pre-relaxation and post-relaxation instructions. The study was an analogue study because neither ongoing treatment nor long-term follow-up was included and only one relaxation session was given. Thus, any significant effect could be regarded as powerful. The results for each test are presented in Table 1 and include both pre- and post-treatment scores as well as the difference scores used in the statistical analyses.

The data in Table 1 show that the incorporation of imagery into the relaxation instructions produced a significant decrease in itchiness and a greater sense of mental relaxation. For physical relaxation there was an improvement for both groups but no significant difference between them, although from observation the experimental group appeared to have greater benefit.

The VAS-itichiness scores are interesting because the experimental group showed a definite decrease in post-treatment itchiness, whereas the control group actually reported a worsening of itchiness post-treatment. The prediction was that S-anxiety and S-anger would also show greater reduction in the experimental than control group. Observation of the data in Table 1 shows there was some reduction of S-anxiety in both groups, but to a much greater extent in the experimental group, with the difference being significant ($p < .04$). Regarding S-anger, both groups reported very low levels of anger at all times and showed no change with either relaxation condition.

Finally, because of the often reported and clinically noted relationship between eczema patients' levels of anxiety and itchiness of skin, exploratory analyses were conducted on the relationship between S-anxiety and itchy sensations for all subjects.

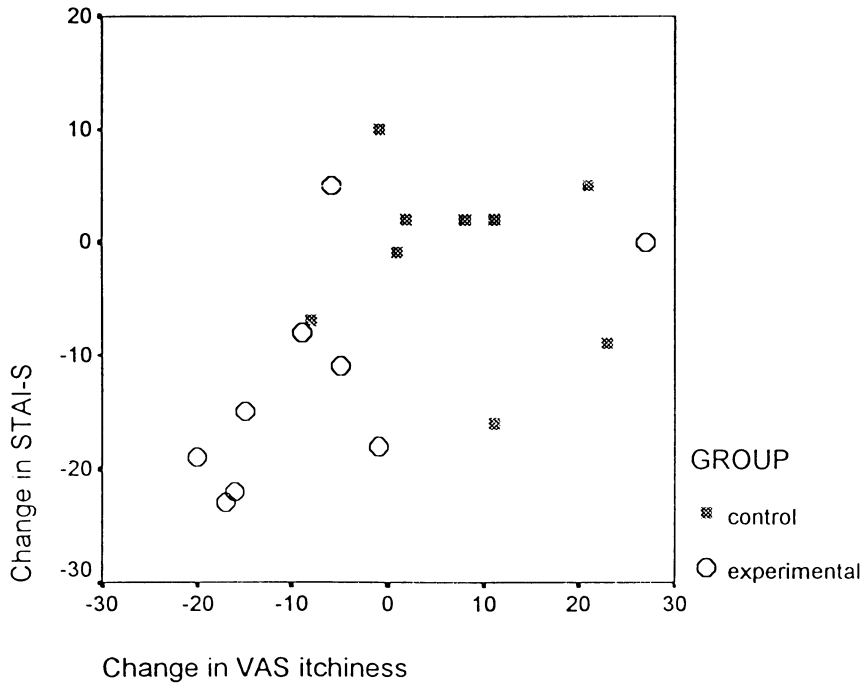


Figure 1. Bivariate scatter plot of eczema patients' reported change in VAS itchiness and change in STAI-State anxiety after the relaxation tasks

Figure 1 shows a plot of improvement on VAS-itchiness in relation to improvement in S-anxiety, for all participants, as measured by change scores between time 1 and time 2. A Pearson correlation found the relationship to be significant ($r = 0.53$, $p = .023$). Therefore, positive changes in itchiness were shown to have a significant positive relationship with a decrease in S-anxiety. From observation of the scatter plot it can be seen that the experimental group showed a stronger relationship than the control group, with only one experimental subject reporting an increase in itchiness and zero change in S-anxiety, and one reporting an increase in S-anxiety with a slight decrease in itchiness. By contrast, only one control subject showed a clear-cut decrease in both itchiness and S-anxiety.

Discussion

The aim of this study was to carry out a pilot investigation into the effects of relaxation with self-induced imagery in comparison to non-imagery relaxation on eczema patients' subjective ratings of skin condition and relaxation levels. The hypotheses stated that relaxation with self-induced imagery will have a greater positive effect upon skin sensations (i.e., a decrease in itchiness) than comparable relaxation without imagery, and will also have greater positive effect upon relaxation levels and both S-anxiety and S-anger levels, in comparison to relaxation without imagery. Except for S-anger, these hypotheses were supported. It was noted that no eczema patient in the control group

(relaxation without imagery) spontaneously produced an image during the relaxation task; hence the manipulation of the relaxation treatment can be considered most effective.

Itchiness is a key trigger to scratching (Jordon & Whitlock, 1974) and it is constant scratching that can produce ongoing and prolonged damage to the skin, causing eczema to become chronic. Thus, if itchiness can be reduced quickly then scratching behaviours are also likely to decrease. The positive results of this study supported that of previous research, that relaxation training can positively affect the severity of eczema (e.g., Ehlers et al., 1995; Horne et al., 1989). However, the finding that patients in the control group reported worse itchy sensations after relaxation (ratings of VAS itchiness post relaxation were greater) argues that the use of imagery in the relaxation instructions was crucial to reducing itchiness, whereas, for feelings of relaxation and S-anxiety, the control group showed some improvement but not to the same extent as the experimental group.

This observed negative change in itchiness in the eczema patients having relaxation without imagery is interesting. Much research, be it with case studies or small clinical populations, has employed repeated relaxation sessions in the treatment phase of the study (Ehlers et al., 1995; Halford & Miller, 1992; Horne et al., 1989; McMenemy, Katz, & Gipson, 1988), whereas this study investigated the effect of a single relaxation session. It may be that, in a single relaxation session, an eczema patient may have difficulty in learning how to react to the instructions unless an imagery component is incorporated in the relaxation task, and thus may experience a worsening of itchiness due to enhanced focusing and self-monitoring of skin and other body sensations. By adding autogenic imagery to the relaxation, the eczema patient is encouraged to actively participate in the relaxation process. The combination of the personal aspect of the imagery and the participation evoked by the imagery may have facilitated the strong positive reaction to the relaxation instructions. It may also be that a certain degree of mental relaxation must be attained before a patient's attention is no longer focused on the itchy sensation. If attention remains focused on the itchy sensation rather than the relaxation experience throughout the relaxation session, the sensation may not dissipate. Consequently, eczema patients with imagery relaxation would experience greater positive changes in relaxation and hence also in reduced sensations of itchiness, at least in the early stages of learning to relax.

The finding of low anger levels and no effects on anger due to either treatment are at variance with some other research (e.g., White et al., 1990). Because anger levels (as measured by STAXI) were equally low in both groups and showed no change due to either treatment, this may indicate that the STAXI does not detect anger or hostility in this group of patients as well as other measures such as the Caine, Foulds and Hope (1967) Hostility and Direction of Hostility Questionnaire used in earlier research (White et al., 1990). Alternatively, this small group of 18 patients may simply not have had major problems with anger.

What the present findings do confirm is that there is a strong interaction between S-anxiety and itchiness, as clearly demonstrated in Figure 1. Thus, reducing S-anxiety quickly may lead to a rapid and beneficial quick decrease in itchiness. To break the conditioned itch-scratch cycle, demonstrated so clearly many years ago by Jordon and Whitlock (1974), clearly offers hope of enhanced control over eczema to sufferers of

this troubling disease. This study demonstrates that the use of a short (15 minute) relaxation tape incorporating autogenic imagery instructions is a powerful form of intervention, positively affecting both S-anxiety, mental relaxation and skin itchiness.

Limitations to the current study were the small number of participants and the lack of dermatologist ratings of eczema severity. An inclusion criterion of the study was that patients were diagnosed with severe eczema by a dermatologist. However, ratings of dermatologists were not standardized and patients were not matched on the duration of their eczema. Previous research has found evidence of a significant relationship between the subjective ratings of itchiness by parents of children with atopic eczema and the ratings of itchiness determined by dermatologists (Charman, 1997). In turn, Charman (1997) found that the ratings of itchiness determined by dermatologists were almost identical to dermatologist ratings of severity of eczema. Therefore, it was deemed that subjective ratings of skin condition would be sufficient to establish the effect of the relaxation treatment conditions in the current study.

Relaxation is a complex phenomenon and when it incorporates autogenic imagery can be a powerful component of psychological therapy for such psychosomatic disorders as eczema. However, psychological treatments generally involve a number of components of which relaxation is only one. This study shows that it is important to design therapeutic trials that enable evaluation of individual components of treatment to be tested both on their own and as an interactional process with other treatment elements, such as HR (e.g., Horne et al., 1992).

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