A CASE STUDY ON EFFECTIVE USE OF HABIT REVERSAL IN ADULT ECZEMA MANAGEMENT

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Habit reversal training is a psychological behaviour modification treatment. The process was originally developed for the treatment of nervous habits and tics and has subsequently been modified specifically for use in the management of chronic atopic eczema when used in combination with optimal topical and educational eczema management interventions. This case study will explain the origins and process of habit reversal and report how this can be used in practice to improve outcomes for patients with chronic atopic eczema.

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KEY WORDS

- Behaviour modification
- Habit reversal
- Atopic eczema
- Scratch
- Psychodermatology

Introduction

Atopic eczema is a chronic skin condition characterised by severe itching and inflammation, and it generally follows a chronic course or has chronic relapses. It is recognised that atopic eczema is a skin disorder with suspected psychosomatic factors associated with its aetiology.[1] Non-pharmacological treatment of atopic eczema is not included in the current National Institute for Health and Care Excellence (NICE) guidance, despite there being international consensus guidelines indicating that psychotherapeutic interventions should be considered for chronic refractory disease alongside systemic therapies.[2]

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Chronic atopic eczema exists partly due to habitual scratching.[3] The repeated scratching is known to result in the lichenification of the skin seen in chronic eczema *(Figure 1)*. The most commonly used psychological intervention aimed at the reduction of scratching in atopic eczema is habit reversal training.[4] Habit reversal training is a psychological behaviour modification treatment. The treatment programme can be used for patients aged 8 years old or above, and can be provided by practitioners in secondary or primary care, making it a practical, economic and effective addition to the care pathway for patients with chronic atopic eczema.

The aim of this article is to present a case study demonstrating the use of habit reversal in the treatment of a patient with chronic atopic eczema. A patient from my clinical practice will be identified. Habit reversal will be reviewed in detail to include a review of the literature available regarding the efficacy of this intervention in the management of chronic atopic eczema. An evaluation of the success of the intervention for my selected patient will then be given alongside a personal reflection on the future use of habit reversal in the management of patients with atopic eczema in practice.

The origins of habit reversal

Habit reversal training was originally developed by Azrin and Nunn[5] for the treatment of nervous habits and tics. The process has subsequently been modified specifically for use in the management of atopic eczema during the 1980s by Dr Peter Noren and colleagues.[6]

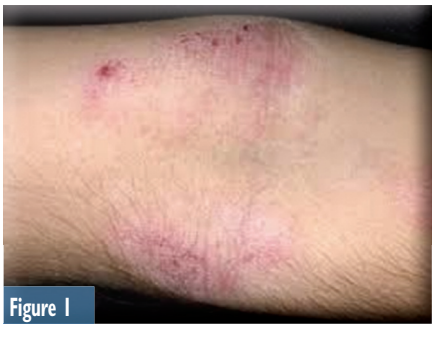

Figure 1

Lichenification

Implications for stepped care and self-help

Habit reversal sits within Level 2 of the simplified stepped care model for providing psychological interventions to dermatology patients *(Figure 2)*.[7] As such, trained psychologists and psychiatrists are not required in the provision of the intervention, hence the intervention can be economically viable to routinely provide within dermatology clinics without access to psychologically trained staff.

Review of habit reversal literature

A literature search using keywords

Figure 2

The simplified stepped care model for providing psychological interventions to dermatology patients
Reproduced from Thompson AR. Psychological Impact of skin conditions. *Dermatological Nursing*. 2009; 8;43-48.

"dermatitis", "eczema", "atopic", "itch", "pruritus", "skin", "dermatological" and "cutaneous" in combination with terms "behaviour modification", "habit reversal" and "psychological intervention", alongside a citation reference search and ancestory approach to identified studies was performed. The search revealed numerous early case reports and case series (many not dermatologically related), two systemic review meta-analyses and four randomised controlled trials hypothesising the potential benefits of habit reversal in reducing the effects of scratching or improvement of quality of life in people with atopic eczema. The majority of these studies used frequency of scratching and clinical severity of atopic eczema as the outcome measure, with only two measuring quality of life or psychological impact on the patients.

All the literature found relating specifically to habit reversal efficacy in atopic eczema cited a case report study by Azrin and Nunn[5] as the first study assessing the efficacy of a newly developed habit reversal process. The aim of the study was to measure the effectiveness of a newly developed habit reversal technique in reducing habit prevalence relating to nervous habits and tics via within-subject comparisons. The study concluded that the habit reversal process appeared to be an extremely effective method of eliminating nervous habits in the 12 patients observed. The relevance of the results of this study may be limited when applied to patients with atopic eczema as none of the subjects had a diagnosis of atopic eczema nor did they have dermatologically related habits such as scratch.

In the late 1980s, more robust randomised controlled trials regarding the efficacy of habit reversal in the treatment of atopic dermatitis were undertaken. The first of these was a study by Melin, Frederiksen, Noren and Swebili[6] in Sweden, which looked at testing the effectiveness of modified habit-reversal treatment in patients with atopic eczema receiving corticosteroid treatment. A non-blinded randomised sample of 16 adult patients with a diagnosis of dermatitis were allocated randomly to two groups. One group received hydrocortisone treatment only, the other group received hydrocortisone plus habit reversal intervention. The results showed a significant reduction in eczema severity, scratch frequency and annoyance ratings in both groups, however, the difference between the groups in relation to all these outcomes was also significant. The authors concluded that the study showed that a behavioural treatment, superimposed on a regular corticosteroid ointment regimen, could improve considerably the skin status of patients with atopic eczema due to a reduction in the patient's frequency of scratching.

The robust study design and statistical analysis techniques of the Melin et al[6] study give confidence in the reliability and validity of the results supporting a strong recommendation by the authors that any treatment for atopic eczema should include steps to reduce scratching, and that habit reversal is an effective way of optimising scratch reduction. However, the study requires an assessment of a longer follow up period, and future research should therefore include assessment beyond four weeks post habit reversal intervention. Studies with larger sample sizes would improve reliability of results.

A study by Noren and Melin[8] in Sweden added to the body of knowledge regarding the efficacy of habit reversal by conducting a larger non-blinded group randomised controlled trial testing and comparing the effect of habit reversal intervention on skin status in patients with atopic eczema in four groups, rather than the two groups included in the previous Melin et al study.[6] The results showed that the skin condition improved in all groups, but to a significantly greater degree in the habit reversal groups. The results of the study supported the hypothesis that the greatest improvement in skin status would be found in the group receiving potent topical steroid plus habit reversal.

Longer term studies were recommended by the authors to allow assessment of long-term efficacy of this intervention. Outcome measures were restricted to clinical variables of dryness, scaling, erythema and infiltration assessed by one consultant dermatologist, increasing the consistency of assessment and reducing the risk of multi-professional subjective variations in assessment. No assessment of quality of life of psychological distress impact was made, which could be considered a limitation of the study.

The most recent RCT study was undertaken by Tsakok et al,[9] and constitutes the only study relating to the efficacy of habit reversal intervention in both disease severity and quality of life outcomes for patients with atopic eczema. The study also aimed to assess the efficacy of habit reversal over a long follow-up period. It is recognised that this

study is unpublished but has been accepted for publication. A prospective observational study of 43 successive patients with atopic eczema referred to an eczema clinic was undertaken. Patients were taught habit reversal techniques and had topical treatment optimization advice.

The authors' report that a clinically significant reduction in eczema severity and improved quality of life immediately following treatment with habit reversal was found to be maintained at follow-up, resulting in significant reductions in the level of required topical treatments and systemic therapies. The authors concluded that the combined approach is effective for reduction in both disease severity and improvement in quality of life in the management of chronic atopic eczema with sustained improvement over a relatively long follow-up period and that the programme can be delivered by both doctors and nurses rapidly within the clinical setting once trained.

It is recognised that limitations of studies, as mentioned so far in this literature review, mean that the current body of knowledge regarding the efficacy habit reversal should be considered a starting point for future updates but, overall, the evidence supports the value of inclusion of habit reversal combined with standard dermatological treatments in the reduction of disease severity and improvement in quality of life for patients with chronic atopic eczema.

Practical implementation demonstrated by a case study

Motivation and agreement

"The first step is to identify a clearly defined behaviour that is agreed needs changing"[10] Paul (pseudonym has been used to protect the anonymity of the patient) and I agreed that the scratching behaviour needed to be changed.

The patient

History

Paul is a 28-year-old male with a lifelong history of atopic eczema. Paul has mild asthma, for which he takes inhalers. Paul's mother has mild eczema and hay fever. Paul reports that the eczema worsened gradually into his late teenage years and adult life. Paul states the eczema never clears, but instead fluctuates in severity and itches all the time, although this does not cause him any sleep disturbance. Paul works as a Sky engineer and is in contact with metals. Paul reports he was patch tested one month ago due to the increased severity of eczema on the exposed sites of neck, forearms and hands since starting this job. Patch tests were negative. Paul does not report any seasonal variations in the eczema, but does recognise that stress at work can trigger eczema flares. Paul is married with two young children aged two and five years. Paul is using an optimal topical treatment regime. Paul takes cetirizine hydrochloride 10mg once daily when very itchy with limited benefit. Paul reports that his main concern is the itch. Paul states that he feels he scratches the skin more profusely once he has started to scratch a small itchy area, particularly in the evening when watching TV. Paul has seen the GP on numerous occasions over the past six months. The community dermatology specialist nurse has seen Paul three times at six-eight weekly intervals for the past six months for eczema management advice. Paul drinks ten units of alcohol per week at a weekend.

Examination

Paul has widespread moderately dry skin to trunk, limbs, face and neck. There are lichenified areas of eczema in the arm and leg flexures and on posterior shoulders. The forearms, neck and face present with moderately inflamed excoriated eczema almost universally. There was no eczema on genital sites. Self-severity score for eczema reported as 4 out of 10. Dermatology Life Quality Index (DLQI) score = 18 indicating the eczema is having a very large effect on quality of life for Paul.

Assessment of psychological needs

It is recognised that the Dermatology Life Quality Index[11] questionnaire does not screen for psychological distress.[12] The DLQI questionnaire can be a useful tool to allow more in-depth conversation about the psychosocial impact a skin condition is having on an individual to take place.[11] Using Socratic questioning can be an effective way to engage patients and to learn more about the client's perspective.[13] For this reason, I used a breakdown of the DLQI answers given by Paul and their respective scores to facilitate targeted Socratic questioning to allow assessment of Paul's specific psychological needs.

Paul's response to the DLQI question relating to how itchy, sore or painful the skin has been over the past week was "a lot". This indicated that itch was a real concern for Paul. Paul's response to the DLQI question relating to how much his skin had been a problem at work was "a lot". Paul also responded "very much" to the question "how embarrassed or self-conscious have you been because of your skin?" These responses suggest possible psychological impact on Paul's perception of himself and possible difficulties in social situations. Socratic questioning was then utilised to allow a psychological assessment of these concerns.

Possible psychological effects of the eczema for Paul were agreed as low mood, heightened self-consciousness, anger and frustration with constant scratching, despite the fact that he did not feel itchy all the time. Stress at work was a recognised trigger for eczema flares. Low mood was mentioned, therefore, I felt it appropriate to assess for possible depression and Paul consented to complete a nine question Patient Health Questionnaire (PHQ-9)[14] for this purpose. The result was a score of one indicating that there was no evidence of depression.

Decision making regarding psychological interventions

It was recognised that stress at work was a likely trigger for increased itch in the eczema and that Paul was concerned regarding other peoples' perception of his skin. It is recognised that various self-help strategies can be helpful in reducing the fear of negative evaluation in patients with visible skin conditions and in reducing stress.[15] Paul was made aware of patient support group information leaflets about living with eczema and signposted to www.skinsupport.org for guidance regarding stress reduction techniques such a deep breathing and relaxation techniques.

Discussion with Paul highlighted that his main concern was the scratch, and he was keen to reduce this. He felt this would improve his quality of life and reduce anger and frustration resulting from persistent itch and scratch. Paul was keen to try an approach different to the usual topical treatments and oral medications due to his

lack of confidence in the efficacy of topical treatments. Paul recognised that only 50% of his scratching was as a result of itch, and reported that scratching was more prolific in the evenings when watching TV.

Habit reversal was suggested as an intervention for Paul at this stage due to the recognition of likely habitual nature to the scratch and evidence of the existence of lichenified skin changes secondary to chronic scratching. The process of habit reversal was explained to Paul. It is recognised that habit reversal is more effective in patients who are self-motivated to follow the habit reversal pathway.[10] Paul reported that he was keen to try this and confirmed that he would have the time and motivation to complete a programme of habit reversal combined with optimal topical treatments. Written consent was gained for the combined approach for the management of atopic eczema[10] to be commenced by utilising the online habit reversal training via the practitioner guide on www.atopicskindisease.com.

Practical implementation of habit reversal as part of the combined approach

The process of implementation is described below with associated explanation of the patient's experience.

Intervention

Stages of habit reversal within the combined approach as developed by Bridgett et al.[4]

Stage one – assessment 1 week homework

Registration of scratching behaviour by the patient is self-recorded by completing a form after measuring scratching episodes with a clicker device for one week. Assessment of quality of life effects on the individual is essential.

Stage two – treatment – 2 weeks homework

Optimisation of topical treatments including advice regarding emollient and topical steroid treatments is given supported by self-help literature. For example: The National Eczema Society (www.eczema.org).

Stage three – reinforcement – 2 weeks homework

Habit reversal is explained. A competing behaviour is demonstrated and it is explained to the patient that this should be used whenever the urge to scratch is evident instead of scratching.

Stage four– follow-up

Follow up after two weeks of stage two intervention gives an opportunity to review the programme and make individual adjustments. If scratching episodes are below 10 per day habit reversal techniques can be stopped, but emollients and intermittent topical steroids can be continued.

Patient experience

Stage one

Paul recorded his scratching for one week after his first appointment with me using "The Eczema Solution" self-help guide for habit reversal.[16] The results gave a baseline level of scratch frequency of 457 episodes per week. Bridgett et al[10] state it is important that circumstances, situations and activities associated with scratching are noted down as this raises awareness of the antecedents for the behaviour of scratch. Scratching during sleep is not counted. Paul's record of situational triggers for scratch indicated most of his scratching occurred when watching TV in the evenings (289 episodes of scratch).

Stage two

Paul was advised regarding optimal use of his emollients and topical steroids and given further education on irritant avoidance/ general principles of eczema management. A full home treatment plan of topical care was provided.

Stage three

Paul and I agreed that the 30 second fist clench then pinching of the skin would be the competing behaviour. Positive advice replaced negative advice, as positive reinforcement of this behaviour is required within the technique. General measures to achieve habit reversal were discussed to take account of particular circumstances. Paul was advised to keep hands busy whilst watching TV by using a stress relief ball, and we agreed that Paul would moisturise well prior to watching TV in the evening to reduce likelihood of itch. Paul was also signposted to the online self-help guide for the Combined Approach (www.atopicskindisease.com).

Stage four

Paul's scratching episodes had reduced to only one per day at the follow-up stage, therefore competing behaviour was stopped, but Paul was advised about long term strategies for reducing any potential flares in eczema.

Patient outcomes

The intervention was successful in reducing both eczema severity and improving quality of life for Paul. Paul had a reduction in DLQI scores after four weeks of treatment compared to before treatment (18 before; 4 after). Paul's self-severity eczema score reduced from four to one. No objective validated tool for eczema severity was used in assessment prior to treatment, but it is suggested that this would have been helpful to aid more objective assessment of clinical improvement and an EASI assessment would be utilised in future cases. Paul stated that his anger and frustration had resolved since stopping scratching.

Table 2 provides a concise summary of practical tips to consider when using the habit reversal technique.

Critical evaluation of habit reversal intervention in practice

Training in the habit reversal process via the online pathway www.atopicskindisease.com and the manual for practitioners[10] was completed, with telephone support from a trained psychologist, within four weeks. Learning the habit reversal process would, therefore, be practical for dermatology clinicians to undertake during busy work schedules.

The combined approach felt very easy to use in practice. This is likely to be due to the strong self-help ethos involved in the process. Paul reported that self-help literature and manuals were helpful in aiding the optimal execution of the programme.

Paul was given good education regarding eczema management principles alongside the habit reversal programme. It is widely recognised that good assessment and education can have psychological and physical benefits in themselves.[17] Therefore, the extent to which this impacted on the outcomes of treatment for Paul compared to habit reversal is unknown. The literature reviewed indicates that against control cohorts, there is less efficacy if topical treatment/patient education and good consultation techniques are utilised in the absence of habit reversal and this was statistically significant in all these papers.

Conclusion

The current critical intervention analysis would support the consideration of utilising

Table 1.

Transcript of Socratic questioning with Paul

Q:	How do you feel about living with the eczema at the moment?
A:	"I feel tired all the time as itching all the time is exhausting. Scratching makes me feel on edge and I can sometimes lose my temper more easily with my wife and children because of this. Putting the creams on all the time can be a bit of a bore. I find it hard to stay motivated to do this."
Q:	Why do you think you lose motivation for treatments?
A:	"I have just lost faith in the creams as I have used them well for at least a month now with no real improvement in the itch and scratch. I sometimes feel that I need to try something different to see if this helps."
Q:	You mentioned that you can sometimes lose you temper with your wife more easily. Why do you think this happens?
A:	"I think I get frustrated and tired because of the itch and scratching. She sometimes tells me to stop scratching and I don't think she understands how difficult that is and so I sometimes get cross with her about this."
Q:	You stated on your questionnaire that you feel very self-conscious and embarrassed about your skin. Why do you feel this way?
A:	"Sometimes, I feel like people are looking at my skin and wondering whether they are going to catch what I have. I get the sense sometimes that people see the scratches all over my neck and forearms and think that I have a contagious disease. My wife always tells me that she is not worried about it but it must be annoying for her when I am scratching all evening when we are watching TV.
Q:	How do you think things would change for you if you did not scratch so much?
A:	"If I could stop itching and scratching, I think my mood would be better. Oh my word, I think that would be amazing, a life without itch and scratch….heaven."

Table 2.

Practical tips for using habit reversal combined approach[16]

- The approach does not require specialist training in psychological therapy
- As much attention is needed in optimising topical treatment as in teaching habit reversal
- It is an educational approach that involves the patient learning how to treat themselves
- Habit reversal is useful in other skin conditions caused by habitual behaviours.

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the "combined approach" of modified habit reversal alongside optimal topical treatment in the management of patients with chronic atopic eczema. It is difficult to make generalisations based on the results of a single case study, but this does show that this approach might be easily integrated into regular practice. The time scale for the intervention was only four weeks and only two face-face appointments were required. It could be argued that this intervention is therefore highly convenient for the patient and practical for use in the time-restricted clinical services in the United Kingdom.

Habit reversal can be learned easily and does not require specialist psychological training. It can be delivered by a dermatologist or specialist nurse during routine clinical appointments, or by self-directed programme using a recognised guide, thereby reducing the burden on the limited psychodermatology services nationally.[18] The intervention sits well at level 2 within the stepped care model for providing psychological interventions to dermatology patients[7] and the Government strategy for mental health service provision in the United Kingdom.[19] DN

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