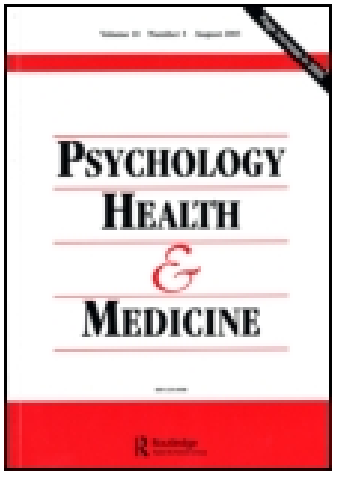

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A pilot study examining mindfulness-based cognitive therapy in psoriasis

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A pilot study examining mindfulness-based cognitive therapy in psoriasis

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A sub-population of people with psoriasis have strong causal beliefs about stress, high levels of emotional distress (anxiety and depression) and an impaired quality of life (QoL). Mindfulness-based cognitive therapy has been found to reduce levels of stress and distress and to improve QoL. This pilot study in people with psoriasis aimed to test the hypothesis that mindfulness could reduce stress and thereby lessen psoriasis severity, improve QoL and reduce distress. Twenty-nine people with psoriasis (22–70-years old; 16 females; 13 males) were randomised to an eight-week mindfulness treatment as an adjunct to their usual psoriasis therapy or to a control group which continued with usual psoriasis therapy alone. All subjects completed self-reported measurements of psoriasis severity, perceived stress, distress and QoL, at baseline and again post-intervention. The mindfulness group reported statistically lower psoriasis severity (Self-Assessed Psoriasis Area Severity Index; $z = 1.96$, $p = .05$) and QoL impairment scores (Dermatology Life Quality Index; $z = 2.30$, $p = .02$) than the control group. There was no significant difference between groups on perceived stress (Perceived Stress Scale; $z = .07$, $p = .94$) or distress scores (Hospital Anxiety Depression Scale; $z = 1.60$, $p = .11$). People with psoriasis who received mindfulness as an adjunct to their usual therapy reported a significant improvement in both psoriasis severity and QoL. These pilot results suggest that a full randomised control trial is justified to examine the effectiveness of mindfulness as an adjunctive treatment for people with psoriasis.

Keywords: mindfulness-based cognitive therapy; psoriasis; stress

Introduction

Psoriasis is a chronic inflammatory skin condition affecting 1.3–2.6% of the UK population and .9–8.5% worldwide (Parisi, Symmons, Griffiths, & Ashcroft, 2013). Thirty seven to seventy eight per cent of people with psoriasis believe their condition is exacerbated by stress and have been labelled "stress responders" (Koo, 1995). A significant proportion of people living with psoriasis also suffer from distress including depression (Hayes & Koo, 2010; Schmitt & Ford, 2007) and anxiety (Hayes & Koo, 2010; Kurd, Troxel, Crits-Christoph, & Gelfand, 2010). The impairment of quality of life (QoL) experienced by people with psoriasis is similar to that experienced by people living with cardiovascular disease and some types of cancer (Rapp, Feldman, Exum, Fleischer, & Reboussin, 1999).

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As stress is thought to exacerbate psoriasis in some patients, a successful stress-reduction intervention would be expected to reduce the severity of the condition. Mindfulness-based cognitive therapy (MBCT) teaches contemplative skills within a cognitive framework of explanation (Segal, Williams, & Teasdale, 2002). It aims to improve cognitive, emotional and behavioural control by increasing the flexibility between a conceptual mode of mind (planning, thinking) and a perceptual mode (touching, hearing, etc.) (Williams, 2010). Experiencing the perceptual mode rather than the conceptual mode reduces the effect of pre-existing beliefs upon information processing and subsequent emotional reactions. Cognitive flexibility is a marker of mental health and well-being. By enhancing the perceptual mode, people with psoriasis may become more aware of the physical sensations and distinguish these from their emotional and cognitive reactions whilst promoting an acceptance of the physical state.

As MBCT is developing a strong evidence base to support its efficacy in both physical (Grossman, Niemann, Schmidt, & Walach, 2004) and mental (Fjorback, Arendt, Ornbol, Fink, & Walach, 2011; Witek-Janusek et al., 2008) well-being and theoretically could meet the needs of this patient population (Fordham, Griffiths, & Bundy, 2012). We conducted a pilot study to test the hypothesis that people with psoriasis who completed the MBCT training would experience a reduction in their perceived stress scores, which would consequently lead to an improvement in their psoriasis symptoms, in comparison to a control group who continued with treatment as usual. A secondary hypothesis explored whether the treatment group would also experience an improvement in anxiety/depression and QoL scores in comparison to the control group.

Method

Patients from a psoriasis clinic in Manchester, UK were recruited if they were over 16 years of age and had a diagnosis of psoriasis without psoriatic arthritis. After baseline measurements ($n = 29$), 10 participants dropped out before starting the MBCT group, stating practical reasons and one participant left the group because they felt it was not suitable for them. Thus, 19 subjects were available for inclusion in the primary analysis (see Figure 1).

After baseline assessment, participants were randomised with block randomisation (block size of six) (Altman & Bland, 1999) to the MBCT treatment or waitlist control group (treatment as usual).

Participants self-reported the severity of their psoriasis with the Self Assessed Psoriasis Area Severity Index (SAPASI; Feldman et al., 1996). Stress was measured with the 10-items Perceived Stress Scale (PSS-10; Cohen, Kamarck, & Mermelstein, 1983). Distress with the Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983). The Dermatology Life Quality Index (DLQI; Finlay & Kelly, 1987) was used to assess the participants' QoL.

All measures are available in Supplemental data. The "causal belief" item of the Illness Perception Questionnaire-Revised (IPQ-R: Moss-Morris et al., 2002) was used to describe the participants within this current study.

Psoriasis can show seasonal variation often improving during the summer months due to the beneficial effects of sun exposure; data for this study were collected during summer (May–June 2011). Mindfulness-based cognitive therapy was delivered over eight consecutive weeks in group-format sessions by a trained MBCT practitioner. As part of the course, participants were invited to practise for 45 min or more daily between

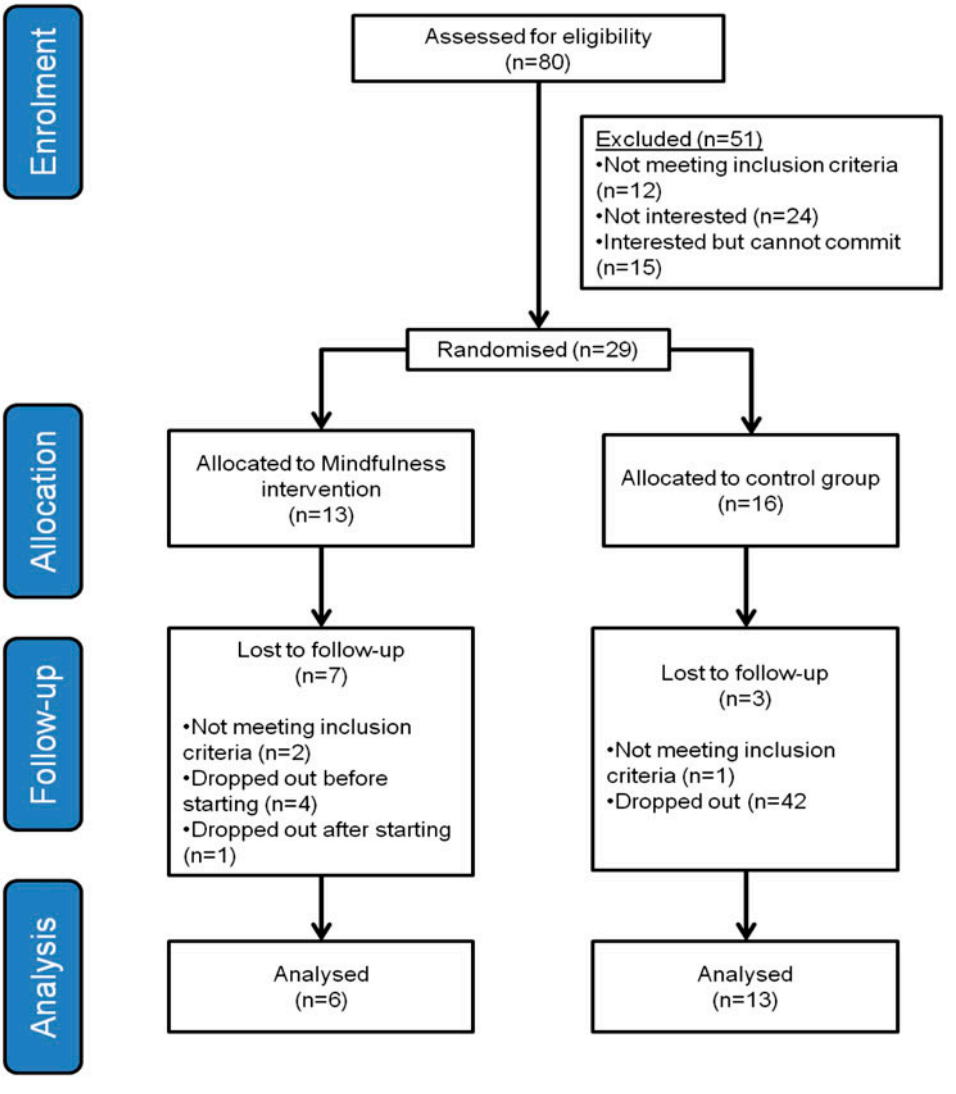

Figure 1. Study flow diagram: enrolment to analysis.

the weekly sessions (course materials available in Supplemental data). Both treatment and control groups continued with their medical treatments as usual (TAU).

The primary analysis used analysis of covariance (ANCOVA) controlling for baseline scores across variables. Good clinical practice recommends that novel interventions should be piloted with patient samples. This enables us to assess whether they are acceptable to the patients and to inform methodology before conducting costly, fully powered RCTs (Campbell et al., 2000). A sample size of $n = 30$ has been recognised as a suitable size for such a pilot study (Lancaster, Dodd, & Williamson, 2002). We aimed to recruit a sample size of $n = 30$.

Results

Participant characteristics are shown in Table 1. The study encountered 45% attrition rate (see Figure 1). All patients in the study believed that stress caused or exacerbated their psoriasis, ("cause" sub-scale of the IPQ-R) and are called "stress responders" here.

The baseline SAPASI scores ranged from .62 points (mild) to 21.52 (severe) ($M = 7.42$, SD = 5.45) (Schmitt & Wozel, 2005). Baseline scores are presented in Table 1.

The SAPASI ($D(19) = .19$, $p < .01$) and DLQI ($D(19) = .22$, $p < .001$) scores were not normally distributed therefore a bootstrap estimate was performed with ANCOVA. The baseline and follow-up mean scores of the variables for each group along with the difference between the groups (with 95% confidence intervals) at follow-up are presented in Table 2.

There were no significant differences between the treatment and control groups at baseline. After adjusting for baseline scores, the bootstrap estimate of the difference in SAPASI scores between the groups was significant ($z(1,19) = 1.96$, $p = .05$). DLQI scores were also significant ($z(1,19) = 2.30$, $p = .2$). We found no significant difference in PSS scores ($z(1,19) = .07$, $p = .94$) or HADS scores ($z(1,19) = 1.60$, $p = .11$) between groups.

Discussion

This current study found that participants who completed the MBCTintervention reported a significant improvement to their psoriasis symptoms, when compared to a TAU waitlist control group. The MBCT group showed a 39% decrease in psoriasis severity and although this percentage is lower than 50% MID adopted for pharmaceutical trials (Carlin, Feldman, Krueger, Menter, & Krueger, 2004), it is still recognised as a helpful improvement by clinical dermatologists.

In addition, the intervention group reported a significant improvement in their QoL score (DLQI) when compared to the TAU control group. Their improvement of two QoL points although less than the standard MID of a five-point decrease (Khilji, Gonzalez, & Finlay, 2002) is nonetheless a shift in the hypothesised direction. Intervention patients did not however report a significant change in their distress (HADS) or stress scores (PSS), when compared to the control group.

The results from this study do not support our hypothesised *mechanism* for change via reduced stress levels (PSS scores) as psoriasis severity (SAPASI scores) reduced

Table 1. Patient characteristics.

Characteristic	Frequency	Percent
Female	16	55
Male	13	45
Single, separated or widowed	12	41
Married or steady relationship	17	59
Topical treatments (emollients and topical steroids)	16	55
Systematic treatments	5	17
Biological therapies	8	28

Characteristic	*N*	Min	Max	*M*	SD
Age (years)	29	22.00	70.00	41.17	13.09
Years with psoriasis	29	3.00	43.00	21.21	10.66

Table 2. Baseline and follow-up scores with difference, *z*-statistic and *p*-value.

		Baseline mean (SD)	Follow-up 1 mean (SD)	The difference at follow-up co-efficient (95% confidence intervals (CI))	z-statistic and *p*-value
SAPASI	Treatment ($n = 6$)	5.94 (3.97)	3.65 (1.37)	3.30 (−0.00–6.60)	$z(1,19) = 1.96$, $p = .05$
	Control ($n = 13$)	7.65 (5.68)	7.02 (5.53)		
HADS	Treatment ($n = 6$)	12.50 (7.50)	10.33 (6.83)	2.76 (−.61–6.13)	$z(1,19) = 1.60$, $p = .11$
	Control ($n = 13$)	15.46 (8.37)	15.54 (7.90)		
PSS	Treatment ($n = 6$)	18.00 (5.66)	16.67 (6.77)	.20 (−5.15–5.55)	$z(1,19) = .07$, $p = .94$
	Control ($n = 13$)	20.84 (6.63)	18.85 (6.38)		
DLQI	Treatment ($n = 6$)	5.67 (5.09)	3.67 (3.56)	4.15 (.62–7.67)	$z(1,19) = 2.30$, $p = .02$
	Control ($n = 13$)	9.15 (7.45)	10.85 (9.03)		

independently of reduction in stress scores. Therefore there may be an alternative route for change or the PSS, a generic measure of stress, might not be specific enough for use in this population.

Previous research found MBCT to improve mental health, including non-clinical and clinical anxiety and depression (Fjorback et al., 2011), albeit not specifically in a psoriasis patient population. This current pilot study, however, did not demonstrate benefits on anxiety and depression. It may be premature to conclude that MBCT does not affect anxiety and depression levels in people with psoriasis as this small scale pilot study may only capture a sub-population. The lack of effect may be partly explained by the small sample size or perhaps by the low levels of anxiety and depression existing within the study population demonstrating a floor effect (Everitt, 2002). Mindfulness teaches participants to bring their attention towards physical sensations including itch, arousal states such as anxiety and behaviours such as scratching. They are simultaneously encouraged to foster an acceptance of positive, neutral and negative sensations. The increased awareness of physical, emotional and behavioural patterns could initially lead to an increase in distress whilst participants are still learning to accept the negative perceptual experience.

We adopted a RCT design, the gold standard method to produce reliable results with minimum bias and used ANCOVA, to examine the change between the treatment and control group from before and after the MBCT intervention. This is the most conservative approach thus further reducing bias. Against these stringent criteria, the results suggest that mindfulness-based interventions offer a promising adjunct therapy for people with psoriasis.

Participants volunteered to join this study and therefore were open to try a stress reduction intervention. When asked "what you consider as the possible causes of your illness", all participants (100%) from this study population selected the "stress or worry" option from the IPQ-R (Moss-Morris et al., 2002), whereas previous research found that

only 70% selected this option (O'Leary, Creamer, Higgins, & Weinman, 2004). During recruitment, if a patient did not believe stress to cause their psoriasis, then they may have been less likely than a "stress responder" to volunteer/commit to the full eight week course. A "stress responder" may have hypothesised that a stress reduction course, if effective, could help improve their psoriasis because they believe stress causes their illness. As a consequence, the study population only included "stress responders" and the results may not be relevant to "non-stress responders".

Future research should explore a longer follow-up time in order to examine whether changes in distress and stress manifest after physical severity of psoriasis changes.

This pilot study aimed to examine whether MBCT was useful for people with psoriasis and has found it to be a feasible intervention to improve psoriasis severity and overall QoL but without changing stress or distress levels.

Conflicts of interest and source of funding

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Supplemental data

Supplemental data for this article can be accessed http://dx.doi.10.1080/13548506.2014.902483.

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