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Article:

The influence of optimism, social support and anxiety on aggression in a sample of dermatology patients. An analysis of cross-sectional data.

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What's already known about this topic?

- Feelings of anger are correlated with anxiety in atopic dermatitis.
- Optimism and social support are significant predictors of depression and anxiety in other patient populations (e.g Rheumatoid Arthritis).

What does this study add?

- High satisfaction with social support predicts lower levels of aggression in individuals with skin conditions.
- High levels of anxiety are associated with greater levels of aggression in dermatology patients.
- Interventions that enhance the ability to be optimistic might be likely to reduce feelings of aggression in dermatology samples.

ABSTRACT

Background: Individuals with visible skin conditions often experience stigmatisation and discrimination. This may trigger maladaptive responses such as feelings of anger and hostility with negative consequences to social interactions and relationships.

Objectives: The present study aimed to identify psychosocial factors contributing to aggression levels in dermatology patients.

Methods: Data was obtained from ninety-one participants recruited from out-patient clinics in the north of England, UK. This study used dermatology specific data extracted from a large UK database of medical conditions collected by the Appearance Research Collaboration (ARC). This study looked at the impact of optimism (LOT-R), perceptions of social support (SFSSQ) social acceptance, fear of negative Evaluation (FNE), appearance concern (CARVAL/CARSAL), appearance discrepancy PADQ), social comparison (INCOMM) and wellbeing (HADS) on aggression levels (RAQ) in a sample of dermatology patients.

Results: In order to assess the relationship between variables, a hierarchical regression analysis was performed. Dispositional style (optimism) was shown to have a strong negative relationship with aggression (β = -0.37 t =-2.97 p = 0.004). Higher levels of perceived social support were significantly associated with lower levels of aggression (β = -0.258 t = -2.26 p = 0.02). Anxiety was also found to have a significant positive relationship with aggression (β = 0.356, t = 2.564, p = 0.01).

Conclusions: The study provides evidence for the importance of perceived social support and optimism in psychological adjustment to skin conditions. Psychosocial interventions provided to dermatology patients might need to address aggression levels and seek to enhance social support and the ability to be optimistic.

INTRODUCTION

Dermatology patients with chronic skin conditions are known to experience stigmatisation and discrimination from the general public[1,2], thus it might be expected that feelings of humiliation and anger might well be affecting their adjustment to living with their condition[3]. Ginsburg, Prystowsky, Kornfeld, and Wolland[4] found that individuals with atopic dermatitis (AD) reported higher levels of anxiety, greater feelings of anger, and less assertiveness than individuals without a skin condition, but also in comparison with individuals with psoriasis. Psoriasis patients showed less ability to express anger than the participants without a skin condition however they did not significantly differ in terms of other personality characteristics such as locus of control or depression. Similarly, Linnet and Jemec[5] found a significant positive relationship between anger and trait anxiety in patients with AD. Not surprisingly, anger, along with body image concerns, were significant predictors for managing anxiety in this sample. Despite this evidence that aggression might be a key affect involved in adjustment to living with a chronic skin condition there is limited research on this subject, and there are no studies to date examining potential predictive factors that might influence aggression in this population.

Stigmatisation towards individuals with skin conditions is associated with sub optimal psychological functioning and has the potential to significantly affect people's emotional wellbeing[6,7,8]. Responses to stigmatisation are varied and depend on the target person's interpretation of the motives for example individuals are more likely to respond in an antisocial or aggressive manner when stigmatisation is perceived as being unjustified. In contrast, when stigmatisation is associated with self-blame, individuals may be more likely to engage in pro-social responses in order to promote acceptance[9].

It is widely acknowledged in the literature that adjustment to the consequences of dermatological conditions is not predicted by disease severity, but rather results from an array of physical, cultural, and cognitive factors that mediate responses to psychological distress[10,11]. Literature shows that dispositional optimism is an important component in the process of adjustment to life stressors and chronic health conditions such as breast cancer[12], multiple sclerosis and Parkinson[13] and psoriasis[14]. Social support and positive affect are also widely known to be linked to better adjustment in health conditions, including those with visible manifestations in the skin, like head and neck cancer[15], psoriasis[16] and vitiligo[17]. Likewise, appearance concerns have been found to be associated with negative affect and self-consciousness in non-clinical populations[18]; In dermatology patients specifically, fear of negative evaluation appears to be significantly associated with psychological distress across a variety of conditions, including psoriasis[19], and atopic dermatitis[20].

The choice of measures in the present study is based on a multi-factorial model of appearance concern that postulates that psychological factors such as optimism are likely to play a crucial role in adjustment[21]. As aggression has not been investigated in detail in dermatological conditions, this study seeks to examine the association between dispositional optimism, perceptions of social support and social acceptance, appearance specific cognitions, anxiety/depression and levels of aggression in a sample of dermatology outpatients. It is hypothesised that higher levels of dispositional optimism, appearance concern and anxiety will be predictors of aggression levels in this sample.

METHOD

The present study used a cross-sectional dataset collected from dermatology clinics in the north of England (n=91). Data utilised for this study were extracted from a wider data base (N=1265) composed of individuals who identified themselves as having a visible condition, taking part in a nationwide project on adjustment to disfigurement conducted by the ARC. The sample represented all of the dermatology respondents from the ARC dataset. Ethical approval was gained through the NHS ethics system and research governance approval was gained from the collaborating NHS Trusts.

Sample size and population

A power analysis was conducted for multiple regression with 16 predictors. The effect size of $f^2 = 0.44$ ($R^2 = .307$) obtained in the larger ARC project was used, with an assumed a significance level of $\alpha = .05$ and power of .95. The power analysis reported that a minimum of at least 79 participants would be required.

This study used a convenience sampling technique; patients from dermatology outpatient clinics from several NHS clinics in Yorkshire, UK, had been approached to participate in the parent study between January – August, 2007. Participants were aged 18 or over, with fluency in written and spoken English. Exclusion criteria included history of severe psychiatric disorder such as psychosis or dementia. The data from 91 participants was extracted in 2013 from a database of 1265 and analysed for the present study.

Measures

Demographic variables

Information on age, gender, family status/living arrangements, and ethnicity was collected. Additionally, participants were asked to rate how disguisable they perceived their condition to be to others using a seven-point Likert scale ranging from 1 (extremely easy) to 7 (impossible). This scale was used because it was of interest to assess the level of perceived ease to hide the condition in this sample.

Intervening psychological processing

Intervening cognitive processing was composed of measures of optimism, socio cognitive factors, appearance-specific cognitions and wellbeing. Optimism was measured with the Orientation Test-Revised (LOT-R)[22]. Socio cognitive factors included measures of perceptions of social support (The Short Form Social Support Questionnaire; SFSSQ[23]) and perceptions of social acceptance (two items with a seven-point Likert ranging from 1 to 6). Appearance-specific cognitions and feelings of social anxiety were measured with the brief version of the Fear of Negative Evaluation (FNE)[24], The Centre for Appearance Research Valence scale (CARVAL; valence of appearance)[25], the Centre for Appearance Research Salience scale (CARSAL; salience of appearance)[25], The Physical Appearance Discrepancy Questionnaire

(PADQ)[26] and the Iowa-Netherlands Social comparison measure (INCOMM)[27]. Wellbeing was assessed with the Hospital Anxiety and Depression Scale (HADS) [28].

Primary outcome measures

Aggression
The Refined Aggression Questionnaire[29] (RAQ) was utilised. This instrument is divided into four factors: physical aggression, hostility, verbal aggression, and anger. Each factor has independent scores, with higher scores indicating higher levels of aggression. <u>Total scores</u> were used as outcome measure of dispositional aggression in the regression analysis. Psychometric analysis of this instrument indicated high internal reliability within the sample (α = .91).

Statistical analysis
Data were analysed using SPSS v.16 (SPSS Inc, Chicago, Illinois). A hierarchical multiple regression analysis was performed in order to assess the contribution played by each variable to anger and hostility levels within the sample. The theoretical framework described previously dictated the order that variables were entered[21]. The variables were entered into the analysis in the following order: Demographics, optimism, socio-cognitive factors, appearance-related cognitions, and anxiety/depression. Bivariate correlation of individual variables was assessed using a Pearson correlation analysis.

The hierarchical multiple regression analysis was conducted with aggression (RAQ) as the dependent variable. The variables were entered in different blocks following the model utilized for this study[21]. Outliers of more than 3.5 standard deviations were identified and transformed. The data derived from the anger questionnaire were positively skewed and were therefore log-transformed in order to meet the normality assumption required for the analysis. Residual values met normality, linearity and homoscedasticity assumptions.

RESULTS
The data from 91 participants (59 females and 41 males) were used for the study. Participants mainly identified attending the dermatology clinic because of skin disease (40.6%). Participants identified various areas of their body as causing them appearance concern. Concern centred upon visible areas of the body such as the head and neck area (29.6%) and arms, hands, thighs and lower legs (29.6%). When asked how easy it was to hide the area of the body of concern (disguisability), over 50% of participants indicated it to be difficult or impossible. For demographic information see Table 1.

Insert table 1 here

Internal consistency of all measures utilised for the study were sound, with Cronbach alpha scores greater than α = .70. For descriptive statistics see Table 2.

The general scores of the aggression questionnaire reached a mean of 26.72 with higher scores shown in the hostility factor of the instrument (M = 7.43, SD = 3.7); scores in this sample were not significantly different from scores of non-clinical participants in the study conducted by Gallardo-Pujol et al.(2006)[30] (see Table 2). The HADS subscales have cut off points that offer indications of normal, moderate and clinical levels of anxiety and depression; in this sample 34% participants obtained scores that indicate the possible presence of clinical anxiety. Similarly, 30.7% of the participants showed the possible presence of clinical depression.

The outcome of the regression analysis (see table 4) shows that 53% of the sample variation in aggression was accounted for by the model and this effect was statistically significant (R^2 = 0.534, F (15) = 5.905, p< 0.001). Significance in R-Squares between models was assessed using ANOVAs.

Block 1 of the hierarchical multiple regression revealed demographic variables accounted for 18% of the variance *(F* (4) = 4.49, *p* = .002). When introducing optimism to the model, an additional 19% of the variance in anger was explained (*F* (1) = 25.32, *p* < 0.001). Adding the socio-cognitive factors (satisfaction with social support, fear of negative evaluation and social acceptance) accounted for 7.4% (R^2 = 0.074) of the outcome's variance (*F* (3) = 3.50, *p* = 0.01). Block 4 contributed 3.8% (R^2 = 0.038) to the change in the variance, however, this change in R^2 was not statistically significant (*F* (5) = 1.06, *ns*). Finally, block 5 accounted for 5% of the variance in anger (*F* (2) = 3.63, *p* = 0.031).

The variables Family status, Fear of negative evaluation, Salience, Valence, Appearance discrepancy, Social comparison, and Disguisability were not significant predictors of the outcome variable. In the first block, age is shown to be a significant predictor (*β* = -0.30 *t* = -2.808 *p* = 0.006), with younger individuals evidencing higher levels of anger. However, when optimism was introduced to the model, age ceased to be significant (*β* =-0.164 *t* = -1.69, *ns*). The model captured a significant gender effect (*β* = -0.26 *t* =-2.909 *p* = 0.005) with male participants presenting higher levels of anger (*M*= 31.00, *SD* = 10.9) than their female counterparts (*M* = 24.4 *SD* = 9.4). Optimism was shown to be a strong predictor of anger (*β* = -0.37 *t* =-2.97 *p* = 0.004) with higher levels of optimism related to lower levels of anger.
The anxiety subscale of the HADS was shown to be a significant predictor of optimism (*β* = 0.356, *t* = 2.564, *p* = 0.01) and higher levels of anxiety correlated with greater levels of anger. Satisfaction with social support was also significant (*β* = -0.258 *t* = -2.26 *p* = 0.02) as higher levels of perceived social support were negatively correlated with levels of anger.

The data on acceptance appeared to suggest that higher levels of perceived acceptance are correlated with higher levels of anger (β = 0.34 t = 2.91 p = 0.005). A closer examination of the simple correlations and the beta weights revealed that they had opposite signs, indicating the presence of a suppressor variable. Specifically, perceived acceptance is negatively correlated with anger but positively predicts anger in the regression model. When simplifying the model and removing the variable of optimism, perceptions of acceptance stopped being significant (β = 0.174, t = 1.54, p = 0.126). This means that while acceptance has a weak negative correlation with anger, once optimism is taken into account, higher levels of acceptance predict higher levels of anger.

DISCUSSION

This study is the first to investigate the role played by psychosocial factors in relation to levels of aggression in dermatology patients. Whilst the anger and hostility levels within this study were within the average range the results demonstrate that perception of social support, optimism, and anxiety all played a role in accounting for significant amounts of the variance in aggression. This is an interesting finding because levels of anger are strongly associated with poor psychological adjustment[3] as well as feelings of rejection[33].

Results on the measures of wellbeing in the sample showed that close to a third of the sample met the criteria for caseness of clinical anxiety and depression, which was comparatively higher than findings within normative, non-clinical samples[28,34]. This finding is coherent with previous studies utilizing the HADS in other samples with disfigurement[11], corroborating high levels of distress experienced by individuals with visible differences. Furthermore, previous studies have found evidence of comorbidity between anger and anxiety disorders [35,36]. Indeed, signs of anger such as irritability, intolerance, and aggression have been suggested to be associated with clinical anxiety[36].

Perhaps the most unexpected outcome of this study was that none of the appearance-related cognition variables appeared to be significant predictors of anger levels in this sample of dermatology patients. However, studies utilising a similar theoretical model, have yield similar results. For example in McBain et al.[37]none of the measures of appearance related cognitions were found to be significantly associated with anxiety and only social anxiety and avoidance was found to predict depression in patients with rheumatoid arthritis. Clearly, given the theoretical importance of these concepts, further exploration is required to examine these factors in longitudinal studies with other populations.

The finding that younger age and male gender were significant predictors of feelings of anger is unsurprising[38,39], but nevertheless suggests that anger should be specifically assessed in this population and that younger males might be the most likely to benefit from interventions aimed at developing optimism and teaching skills to manage the reactions of others.

A strong negative correlation between optimism and anger was quite clearly identified. The research literature suggests that optimistic people have a more positive approach and greater confidence regarding the future, they tend to show greater resilience when

confronting adversity and may be better able to develop strategies for coping[40]. Optimism can be developed[41] and has effectively been included in intervention strategies to improve psychological adjustment in individuals with skin conditions[42] and to promote wellbeing in the general population[43]. Results from this study suggest that optimism should be targeted as a key element in the design of interventions for decreasing aggression in this population.

Greater satisfaction with social support was also associated with lower levels of anger in this study. Social support from others and the feelings of belonging to a social group has been shown to be protective factors for mental health, wellbeing and adjustment to health conditions that effect appearance[23,15,44]. In addition, feelings of belonging to a social network and perceptions of support have been shown to be protective factors in reducing levels of anger[45,46] and have being linked with optimism in regards to promoting wellbeing in patients with breast cancer[47].

The involvement of social support as a factor within intervention programs has already been demonstrated to be effective. Indeed, research indicates that cognitive-behavioural strategies involving the supporting role of friends or family yield better results than those not involving social networks [48,49].

The present study had a number of limitations. The sample was comprised of participants with a wide range of conditions and the nature of the condition/area of concern was based on self-report with no objective measure of the severity or diagnosis of the dermatological condition available. Also, the study extracted data from a dataset that had used convenience sampling, and despite the participants being recruited from standard dermatology clinics this method of sampling does pose a potential threat to the representativeness of our sample. In addition, the cross-sectional design of the study limits the ability to make causal inferences and a longitudinal study with a more robust sampling procedure and a larger more clearly defined sample is required before we can be confident in the role played by optimism and social support in accounting for feelings of anger in dermatology out-patients. Whilst the use of the total trait score of aggression was justified in this first study of aggression in a dermatology sample, future studies are needed to examine the sub-traits within the measure[29]. Finally, further studies are needed to investigate other affective states known to be associated with stigmatisation that have also received little attention in the literature such as shame[50,51,52].

Results from this research provide evidence of a relationship between optimism, anxiety, and perception of social support and lower levels of aggression dermatology patients. Whilst further research is needed to confirm our findings, they do suggest that optimism and social support warrant investigation as targets for psychological intervention in dermatology patients affected by anger.

9

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